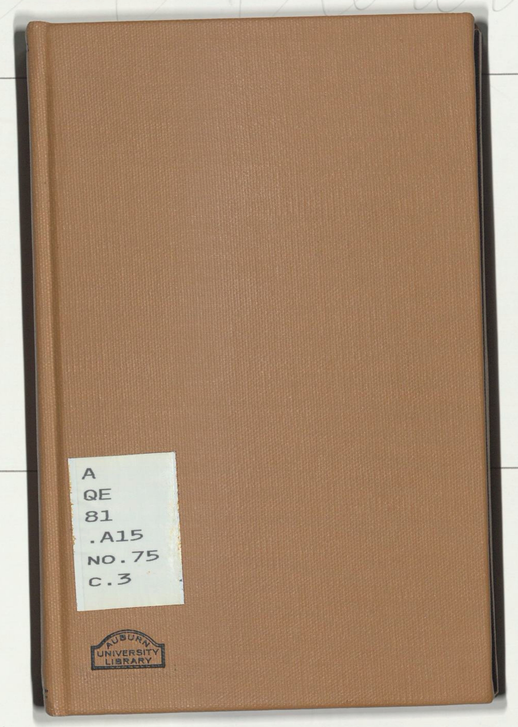
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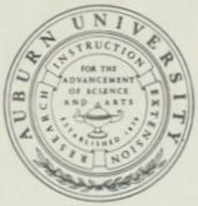

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State Geologist

DIVISION OF WATER RESOURCES

Doyle B. Knowles
Chief Hydraulic Engineer

BULLETIN 75

GROUND-WATER RESOURCES OF RUSSELL COUNTY, ALABAMA

A Reconnaissance

By John C. Scott

Prepared by the United States Geological Survey
in cooperation with the
Geological Survey of Alabama

UNIVERSITY, ALABAMA

1964

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University, Alabama
June 1, 1964

..onorable George C. Wallace
Governor of Alabama
Montgomery, Alabama

Dear Governor Wallace:

I have the honor to transmit herewith the manuscript of a report entitled "Ground-Water Resources of Russell County, Alabama, a Reconnaissance" by John C. Scott, with the request that it be printed as Bulletin 75 of the Geological Survey of Alabama.

The principal sources of ground water in Russell County are the Tuscaloosa Group and the Eutaw and Blufftown Formations. Aquifers in the Tuscaloosa Group are a potential source of water supply for industrial use and will probably yield more than 500 gallons per minute to individual wells in the central and southern parts of the county. Yields of 100 gallons per minute from individual wells can be obtained from the Eutaw and Blufftown Formations in some parts of the county. Water from the Tuscaloosa Group is generally of good chemical quality. Water from the Eutaw and Blufftown Formations is soft to very hard and, in some places, has a high iron content.

Respectfully,

Philip E. LaMoreaux

Philip E. LaMoreaux
State Geologist

317-806

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GROUND-WATER RESOURCES OF RUSSELL COUNTY, ALABAMA

A Reconnaissance

By John C. Scott

ABSTRACT

Russell County comprises an area of 639 square miles in southeastern Alabama in the East Gulf Coastal Plain section of the Coastal Plain physiographic province. It has a population of 46,351, according to the 1960 census. The county is primarily rural, the only incorporated towns being Phenix City, the county seat, and Hurtsboro.

The county is divided physiographically into the Central Pine Belt, the Black Prairie, the Chunnennuggee Hills, and the terraces and flood plains. The terrain of the Central Pine Belt and the Chunnennuggee Hills is moderately rolling to hilly; the terrain of the Black Prairie, the terraces, and the flood plains is flat to gently rolling.

Russell County is underlain by sedimentary deposits of Cretaceous age which rest on pre-Cretaceous metamorphic and igneous rocks. The Cretaceous deposits consist of the Tuscaloosa Group undifferentiated, the Eutaw Formation, and the Selma Group which comprises the Blufftown Formation, the Mooreville Chalk, and the Cusseta Sand Member of the Ripley Formation. Terrace and alluvial deposits of Quaternary age overlie the Cretaceous and older rocks in and adjacent to the valleys of the Chattahoochee River and the larger creeks in the county. The pre-Cretaceous rocks crop out only in stream valleys in the vicinity of Phenix City. The Cretaceous beds crop out in a series of eastward-trending belts across the county that dip south-southeastward 30 to 45 feet per mile.

The principal sources of ground water in the county are sand and gravel beds in the Tuscaloosa Group, the Eutaw Formation, and the Blufftown Formation. The pre-Cretaceous rocks are a source of ground water in the northeastern part of the county; the Cusseta Sand Member of the Ripley Formation is a source of water in the southern part of the county; and the terrace and alluvial deposits are a source of water in and adjacent to the larger stream valleys. Estimated maximum yields from the principal aquifers are as follows: pre-Cretaceous rocks, 100 gpm (gallons per minute); Tuscaloosa Group, 500 gpm; Eutaw Formation, 100 gpm; Blufftown Formation, 150 gpm; Cusseta Sand Member of the Ripley Formation, 10 gpm; and terrace deposits, 100 gpm. Flows can be obtained from wells tapping the Tuscaloosa Group and the Eutaw and Blufftown Formations in low-lying areas in some parts of the county.

Ground water of good quality can be obtained in most parts of the county. Water from the Tuscaloosa Group is generally of good quality in most areas but locally may have a high iron content. Water from the Eutaw and Blufftown Formations is soft to very hard, and, in some areas, has a high iron content. Water from the pre-Cretaceous rocks is generally hard and contains excessive amounts of iron, sulfate, and other minerals but is suitable for some uses. Water from the Cusseta Sand Member of the Ripley Formation and the terrace and alluvial deposits reportedly contains excessive iron in places but is probably of good quality otherwise.

Moderate to large quantities of ground water are available for future development in Russell County. The most promising areas are in the southern part of the county and in the Chattahoochee River valley.

INTRODUCTION

Russell County comprises an area of 639 square miles in southeastern Alabama (fig. 1) and has a population of 46,351, according to the 1960 census. The county is primarily rural and Hurtsboro is the only incorporated town with a central ground-water supply. Phenix City, the county seat, is supplied by surface water from the Chattahoochee River. Prior to 1962, very little ground water was used for industrial purposes in the county and none was used for irrigation.

PURPOSE

The purpose of this investigation was to collect sufficient information to determine the occurrence, availability, movement, and chemical quality of the ground-water resources in Russell County. The U.S. Geological Survey in cooperation with the Geological Survey of Alabama is making reconnaissance-type ground-water studies in counties where adequate data are not available to evaluate supplies or to aid the water user in solving existing or future problems. The work was done under the direct supervision of W. J. Powell, district geologist of the Ground Water Branch of the Federal Survey.

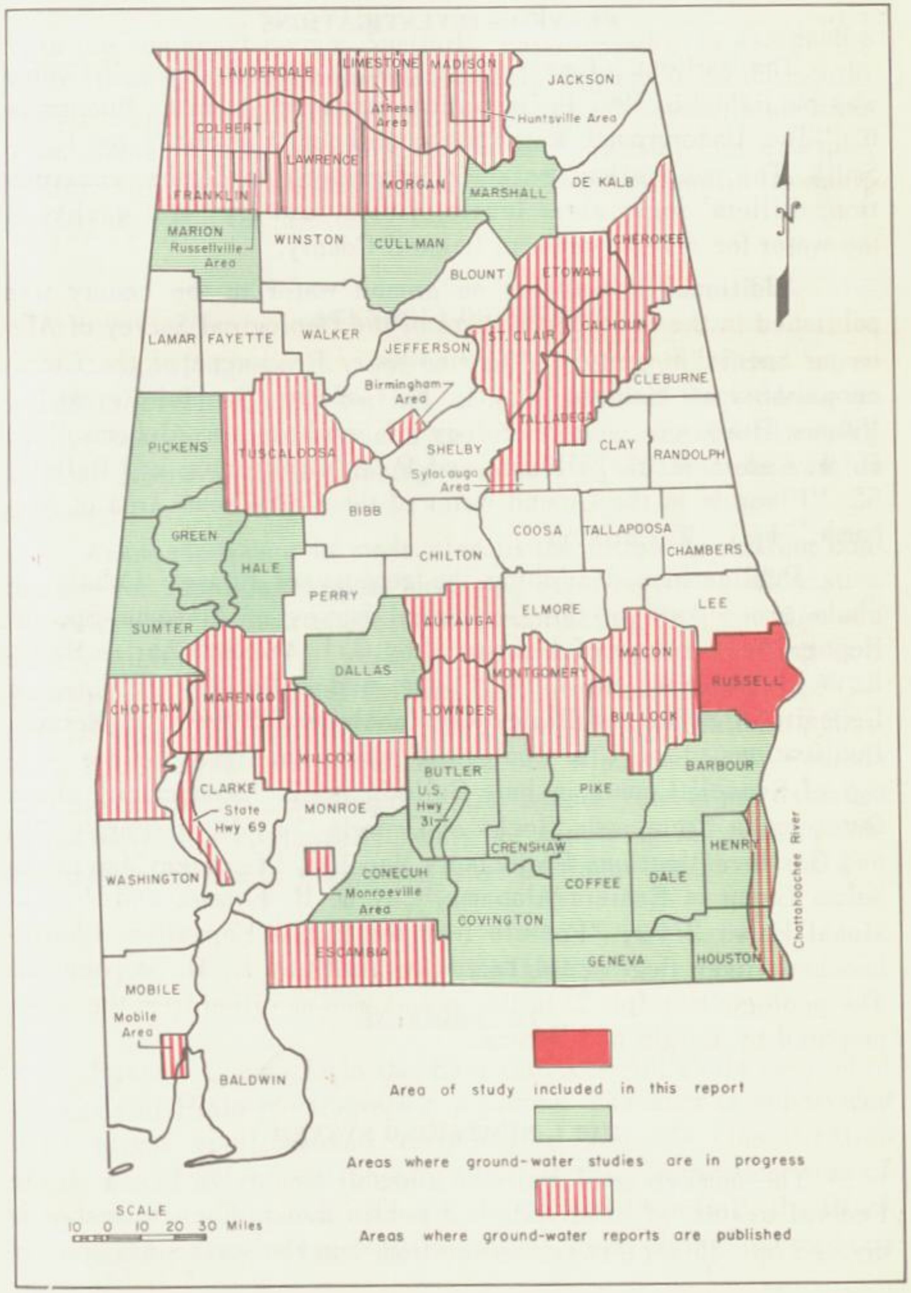


Figure 1.—Map of Alabama showing area studied and areas of other ground-water studies.

PREVIOUS INVESTIGATIONS

The earliest information on ground water in Russell County was published in 1907 in Geological Survey of Alabama Monograph 6, "The Underground Water Resources of Alabama," by E. A. Smith. The publication contained information on depths, construction, drillers' logs, water levels, yields, and chemical quality of the water for several wells in Russell County.

Additional information on ground water in the county was published in the following reports of the Geological Survey of Alabama: Special Report 18, "Ground-Water Resources of the Cretaceous Area of Alabama," by C. W. Carlston; Special Report 20, "Water Resources and Hydrology of Southeastern Alabama," by R. W. Carter, M. R. Williams, and P. E. LaMoreaux; and Bulletin 52, "Fluoride in the Ground Water of the Cretaceous Area of Alabama," by C. W. Carlston.

Publications describing the geology of Russell County include two reports of the Geological Survey of Alabama—Special Report 14, "Geology of Alabama," by G. I. Adams, Charles Butts, L. W. Stephenson, and C. W. Cooke, and Bulletin 48, "Notes on Deposits of Selma and Ripley Age in Alabama," by W. H. Monroe. Publications of the U.S. Geological Survey that describe the geology of Russell County include Bulletin 1014, "Stratigraphy of the Outcropping Cretaceous Rocks of Georgia," by D. H. Eargle; Oil and Gas Investigations Preliminary Map 105, "Geologic Map of the Selma Group in Eastern Alabama," by D. H. Eargle; and Professional Paper 274-J, "Fossils from the Eutaw Formation, Chattahoochee River Region, Alabama-Georgia," by L. W. Stephenson. The geologic map (pl. 2) in this report was modified from the maps prepared by Eargle and Monroe.

WELL-NUMBERING SYSTEM

The numbering of wells in Russell County is based on the Federal system of subdivision of public lands. Each township is divided into 36 sections numbered from 1 in the northeast corner to

36 in the southeast corner. Similarly, each township is assigned a letter, from A in the northeast township through X in the south-central township (fig. 2). The wells within each township are numbered consecutively, as are sections in a township; for example, in township A they are designated A-1, A-2, A-3, and in township B, B-1, B-2, B-3 (pl. 1).

ACKNOWLEDGMENTS

Acknowledgment is made to Warren Gregory, Utilities Superintendent of Hurtsboro, for his cooperation and help during an aquifer test at Hurtsboro, and to officials at the Fort Benning Military Reservation for making available a well for observation purposes.

Acknowledgment is made also to the following drilling contractors for supplying drillers' logs and other pertinent information for wells and for their cooperation in collecting drill cuttings and making electric logs of wells in the county: Acme Drilling Co., Montgomery, Ala.; Ballard Drilling Co., Alexander City, Ala.; Gilbert Drilling Co., Phenix City, Ala.; Gray Artesian Well Co., Marianna, Fla.; Layne-Central Co., Pensacola, Fla.; and H. W. Peerson Drilling Supply Co., Birmingham, Ala. Special thanks are extended to the residents of Russell County for supplying information concerning wells, use of water, and other pertinent data.

PHYSICAL FEATURES

TOPOGRAPHY

Russell County is in the East Gulf Coastal Plain section of the Coastal Plain physiographic province. The area is subdivided (with slight modifications) according to Monroe's classification (1941, p. 29-30) of the physiography of the Cretaceous area of Alabama. These subdivisions are: the Central Pine Belt, the Black Prairie, the Chunnennuggee Hills, and the flood plains and terraces (fig. 3).

The Central Pine Belt is formed on the outcrop of the Tuscaloosa Group and the Eutaw Formation, and extends across the

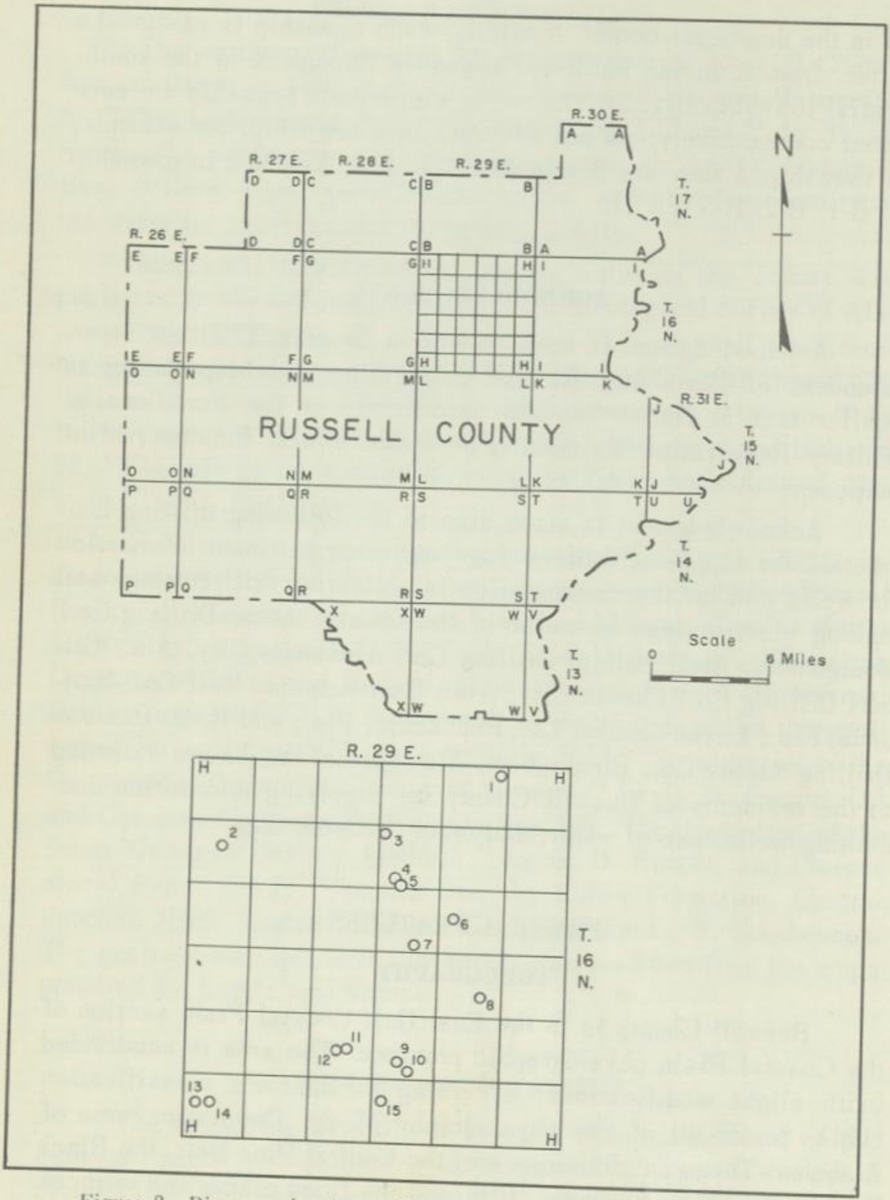


Figure 2.—Diagram showing well-numbering system used in Russell County.

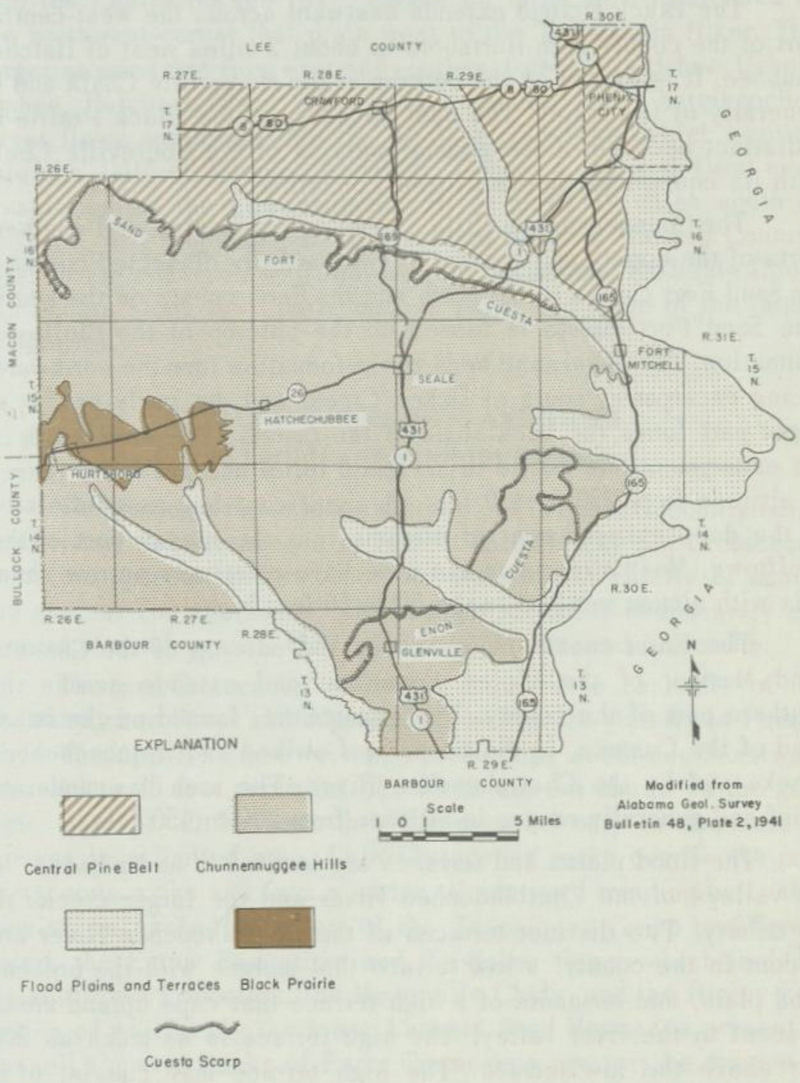


Figure 3.—Physiographic map of Russell County.

northern part of the county north of Uchee Creek. The area is relatively hilly and generally ranges in altitude from 300 to 600 feet.

The Black Prairie extends eastward across the west-central part of the county from Hurtsboro to about 2 miles west of Hatchechubbee. It is formed on the outcrop of the Mooreville Chalk and is generally of low relief. The east boundary of the Black Prairie is indistinct because of the gradual merging of the Mooreville Chalk with its equivalent, the Blufftown Formation.

The Chunnennuggee Hills extend across central and southern parts of the county and consist of two partially dissected cuestas, the Sand Fort cuesta on the north and the Enon cuesta on the south. The Sand Fort cuesta is formed on the outcrop of the Blufftown Formation. The basal sand beds of the formation form the northward-facing escarpment south of Uchee Creek, and the marly or clayey upper part forms the back-slope of the cuesta. The area south of the escarpment has gentle to moderate relief and generally ranges in altitude from 250 to 450 feet. A significant feature of the area is the deep entrenchment of streams into the clayey part of the Blufftown. Most streams in the area have relatively narrow channels with almost vertical banks 20 to 50 feet high.

The Enon cuesta is formed on the outcrop of the Cusseta Sand Member of the Ripley Formation and extends across the southern part of the county. The escarpment, formed on the basal sand of the Cusseta, is dissected by Cowikee and Hatchechubbee Creeks and by the Chattahoochee River. The area has moderate relief and generally ranges in altitude from 200 to 450 feet.

The flood plains and terraces are located in and adjacent to the valleys of the Chattahoochee River and the larger creeks in the county. Two distinct terraces of the Chattahoochee River are evident in the county: a low terrace that merges with the present flood plain, and remnants of a high terrace that caps upland areas adjacent to the river valley. The high terrace is as much as 200 feet above the low terrace. The high terrace may consist of a series of terraces but it is not differentiated in this report.

DRAINAGE

All tributaries in Russell County drain east and southeast into the Chattahoochee River except for those in a small area in the northwest corner that drain west to the Tallapoosa River. The larger streams that flow east and southeast are Little Uchee, Uchee, Igahee, Hatchechubbee, and Cowikee Creeks. The Chattahoochee River flows southward into the Apalachicola River which empties into the Gulf of Mexico. Walter F. George Lock and Dam, near completion on the Chattahoochee River about 19 miles south of Eufaula, will inundate part of the flood plain in Russell County. Most of the county is well drained, but occasional moderate flooding occurs along the Chattahoochee River and some of the larger tributaries.

GEOLOGIC FORMATIONS AND THEIR WATER-BEARING PROPERTIES

The geologic formations cropping out in Russell County range in age from pre-Cretaceous to Recent (pl. 2). The pre-Cretaceous rocks are igneous and metamorphic and consist chiefly of schist and gneiss. The Cretaceous and younger rocks are sedimentary and consist of sand, gravel, clay, chalk, sandstone, and limestone.

The pre-Cretaceous rocks are exposed in channels of the Chattahoochee River and adjacent streams in the vicinity of Phenix City. The upper surface of these rocks dips south-southeastward about 60 to 75 feet per mile. The rocks are not shown on the geologic map (pl. 2) because they are exposed only in channels of streams in a limited area. Late Cretaceous rocks overlie the pre-Cretaceous rocks and form a series of eastward-trending belts that consist, in ascending order, of the Tuscaloosa Group undifferentiated, the Eutaw Formation, and the Selma Group which includes the Blufftown Formation, the Mooreville Chalk, and the Ripley Formation of which only the lower Cusseta Sand Member is present in Russell County. Rocks of Early Cretaceous age may be present in the subsurface in the southern part of the county (Applin and Applin, 1947) but are not exposed at the surface. The Late Cretaceous formations dip south-southeastward 30 to 45 feet per mile and have a total thickness of more than 1,500 feet in the southern part of the

county. The altitude of the top of the Eutaw Formation is shown in figure 4.

Quaternary terrace and alluvial deposits in the county consist of sand, gravel, and clay in and adjacent to the Chattahoochee River valley and in valleys of the larger creeks. These deposits, where present, generally range in thickness from 5 to 50 feet.

Minor faulting has occurred in some parts of the county since Cretaceous time but appears to be of limited areal extent. Block-type faults are exposed in cuts along a newly paved road that joins U.S. Highway 431 with County Highway 28 in the southwestern part of Phenix City. The Eutaw Formation in this area is faulted against the underlying Tuscaloosa Group and also against the overlying Blufftown Formation. Displacement of beds in the faulted area is probably less than 100 feet. Faulting may have occurred also in the vicinity of Peters Branch about 7 miles north of Hurtsboro along State Highway 37. Beds in the upper part of the Eutaw Formation are probably faulted against basal beds of the overlying Blufftown Formation.

The distribution of outcropping formations in the county is shown on plate 2 and the thickness and lithologic character of formations penetrated by wells and test holes are shown on plates 3 and 4. Sample and drillers' logs for wells in Russell County are given in tables 4 and 5. A generalized section of the geologic units and their water-bearing properties is given in table 1.

PRE-CRETACEOUS ROCKS

The pre-Cretaceous rocks in Russell County are undifferentiated and consist of schist, gneiss, granite, quartzite, and marble. Because of the indurated glassy nature of these rocks, they are often called "crystalline rocks." The upper surface of the pre-Cretaceous rocks dips south-southeastward about 60 to 75 feet per mile.

Crystalline rocks are dense and relatively impermeable and generally yield only small quantities of water to wells; however, the crystalline rocks underlying the northeastern part of Russell County yield as much as 55 gpm (gallons per minute), and yields of 25 gpm are common. The water is obtained from fractures in the

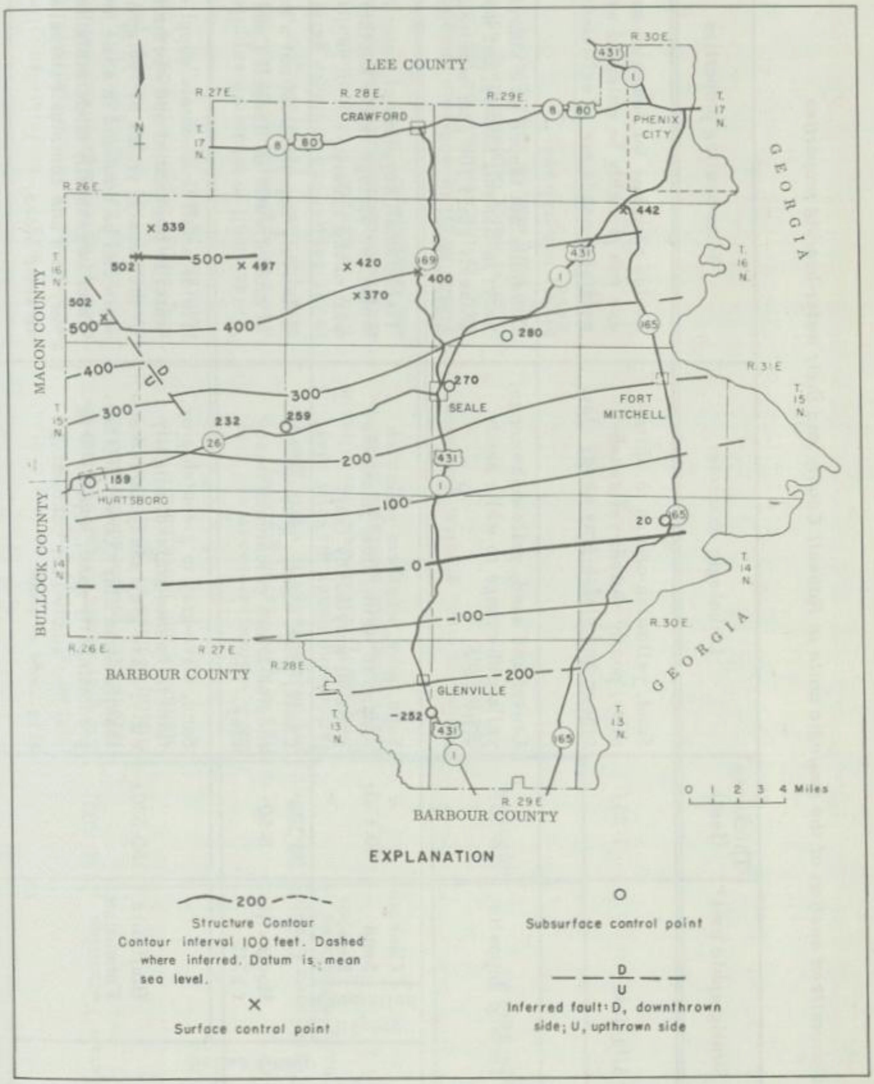


Figure 4.—Map showing the altitude of the top of the Eutaw Formation.

Table 1.—*Generalized section of the geologic units in Russell County and their water-bearing properties*

System	Series	Stratigraphic unit	Thickness (feet)	Lithologic character	Water-bearing properties
Quaternary	Pleistocene to Recent	Alluvium	1-25±	Sand, yellowish-orange to white, silty, poorly sorted; yellowish-orange and bluish-gray sandy clay.	Yields adequate for domestic and stock use can probably be obtained where saturated sands are of sufficient thickness.
		Terrace deposits	5-50±	Gravel and sand, yellowish-orange; yellowish-orange to white sandy silty clay.	Generally not tapped as a source of water in Russell County, but would probably yield 100 gpm or more in some areas.
Cretaceous	Upper Cretaceous	Selma Group — Ripley Formation — Cusseta Sand Member	50-150±	Sand, gray, weathers yellowish orange to white, fine- to coarse-grained; gray sandy clay.	Yields small supplies of water to wells and springs in the southern part of the county.
		Selma Group — Mooreville Chalk	5-50±	Chalk, gray, sandy; gray to reddish-brown calcareous sandy clay.	Relatively impermeable; not a source of ground water in Russell County.
		Selma Group — Blufftown Formation	50-530±	Sand, olive-gray to greenish-gray, fine- to coarse-grained, slightly silty; olive-gray sandy calcareous fossiliferous clay. Lower 200 feet predominantly sand; upper 200 to 300 feet sandy clay containing thin beds of sand.	Yields small to moderate supplies of water in the central and southern parts of the county; yields of 100 gpm or more can be obtained in some areas. Water is generally moderately hard to very hard and contains excessive iron in some areas.

	Eutaw Formation	150-300±	Sand, gray, coarse to very coarse grained, gravelly; grades upward into gray sandy calcareous fossiliferous clay interbedded with thin indurated beds of fossiliferous sandstone and limestone.	Yields small to moderate supplies of water to wells in most parts of the county. Water is generally soft or moderately hard and generally contains excessive iron in the central part of the county. Supplies towns of Hurtsboro and Seale.
	Tuscaloosa Group undifferentiated	50-700±	Sand, yellowish-orange and gray, fine to very coarse grained; yellowish-orange to white gravel; varicolored sandy gravelly clay; gray sandy calcareous fossiliferous clay; some thin indurated beds.	Yields small to moderate supplies of water throughout most of the county. Would probably yield 500 gpm or more in the central and southern parts. Water is generally of good quality; locally it contains excessive iron and manganese.
Pre-Cretaceous Rocks		Unknown	Schist, gneiss, granite, quartzite, and marble.	Yields small to moderate supplies of water in the northeastern part of the county. Water is moderately hard to very hard and, in some places, is highly mineralized.

crystalline rocks; recharge is from interconnected fracture systems in updip areas to the north or from the overlying Tuscaloosa Group.

CRETACEOUS SYSTEM

TUSCALOOSA GROUP UNDIFFERENTIATED

The Tuscaloosa Group consists of white, yellowish-orange, and gray sand and gravel interbedded with varicolored and gray clay that contains some thin beds of sandstone. The group thickens from less than 50 feet in the northern part of the county to more than 700 feet in the southern part.

The Tuscaloosa Group is the principal source of water for domestic and stock use in the northern part of the county except in some areas near Phenix City. It also is tapped by several wells in central and southern parts of the county. The largest yields from wells tapping the Tuscaloosa in the county are about 50 gpm. Based on yields from the group in adjacent counties, 500 gpm or more can probably be obtained in central and southern parts of the county from wells drilled sufficiently deep to penetrate all sand and gravel beds in the group.

EUTAW FORMATION

The Eutaw Formation unconformably overlies the Tuscaloosa Group and crops out in a narrow eastward-trending belt south of Uchee Creek. Outliers of the formation cap some ridges north of the creek. The middle and upper parts of the Eutaw consist chiefly of gray sandy calcareous fossiliferous clay interbedded with thin indurated beds of fossiliferous sandstone and limestone. Some clay beds are highly fossiliferous and, in the outcrop, are locally referred to as "shell reefs" or "oyster banks." The basal part of the Eutaw is a sand bed that yields small to moderate (5 to 94 gpm) amounts of water to wells. The largest yields from the Eutaw are at Hurtsboro (wells O-2 and O-3, table 2). Well O-3 had a drawdown of 166.5 feet after pumping 94 gpm for 10 hours on March 7, 1962. The Eutaw is about 150 feet thick in the outcrop but thickens downdip to about 300 feet in the subsurface in the southern part of the county. The basal sand thickens from about 5 feet in the outcrop to more than 50 feet in the subsurface in the southwestern part of the

county. Thin sand beds occur elsewhere in the formation in some areas, but generally yield only small amounts of water.

The Eutaw is a source of water in central and southern parts of the county. Yields of 100 gpm or more can probably be obtained in the southwestern part of the county, and yields of 25 to 50 gpm can probably be obtained in the central and southern parts.

SELMA GROUP

BLUFFTOWN FORMATION

The Blufftown Formation overlies the Eutaw Formation and crops out in most of Russell County south of Uchee Creek (pl. 2). The broad area of outcrop is due partly to the formation thickness (as much as 530 feet), and partly to the southward slope of the topography which approximates the dip of the beds. The lower part of the formation consists of about 200 feet of gray fine- to coarse-grained sand and sandy clay and the upper part consists of 200 to 300 feet of gray calcareous sandy clay containing some thin beds of sand and calcareous sandstone. In the western part of the county, the lower part of the Blufftown merges with an eastward-extending tongue of the Mooreville Chalk which crops out in the general vicinity of State Highway 26 between Hurtsboro to Hatchechubbee. The Mooreville is not distinguishable east of Hatchechubbee.

The lower part of the Blufftown supplies small to moderate quantities of water to domestic and stock wells throughout central and southern parts of the county. Well T-1 at Saint Josephs Missionary Cenacle at Holy Trinity had a reported yield of 150 gpm in 1949. The upper part of the Blufftown, because of its relatively impermeable nature, does not generally yield water to wells.

Flows from wells tapping the Blufftown are obtained in the valley of Hatchechubbee Creek and its tributaries from the vicinity of Pittsview southeastward. Wells tapping the Blufftown in Pittsview and Rutherford flowed in 1906 (Smith, 1907, p. 235-237), but most had ceased flowing in 1940 (Carlston, 1944, p. 190). None of these wells were flowing in 1961. Cessation of flows from the Blufftown in these areas was probably caused by declines in water level but may be partially attributed to leakage where permeable beds of

alluvial sand and gravel near the surface were not cased off when the wells were constructed.

MOOREVILLE CHALK

The Mooreville Chalk crops out in a narrow belt that trends eastward from Hurtsboro to the vicinity of Hatchechubbee where it merges with the lower part of the Blufftown Formation. The Mooreville consists of about 50 feet of calcareous clay and chalk near Hurtsboro. It becomes more sandy toward the east where it merges with the Blufftown. The Mooreville is relatively impermeable and is not a source of water in Russell County.

RIPLEY FORMATION

The Cusseta Sand Member of the Ripley Formation overlies the Blufftown Formation and crops out in southern Russell County from Glenville and Cottonton southward to Barbour County (pl. 2). The upper unnamed member of the Ripley crops out south of Russell County. The Cusseta Sand Member consists of yellowish-orange to gray fine- to coarse-grained sand and sandy clay and is about 150 feet thick at the south boundary of the county.

The Cusseta Sand Member is tapped by several wells in the southern part of the county, but yields are generally less than 10 gpm. It is a potential source of water for domestic and stock supplies south of Glenville and Cottonton.

QUATERNARY SYSTEM

TERRACE AND ALLUVIAL DEPOSITS

Terrace and alluvial deposits of Pleistocene to Recent age overlie all formations in and adjacent to the valley of the Chattahoochee River and in valleys of the larger creeks in the county.

The low terrace and the alluvial deposits are indistinguishable and are mapped as a single unit because of their similarity in lithology and altitude. They generally consist of 5 to 50 feet of sand, gravel, boulders, and clay. The low terrace deposits are highly permeable in some places and are a potential source of ground water although they are virtually untapped at present. Yields of 100 gpm or more can probably be obtained from terrace sand and

gravel in some areas. Alluvial deposits will probably yield adequate supplies for domestic and stock use where saturated sands are of sufficient thickness.

Remnants of a higher terrace or terraces cap upland areas adjacent to the Chattahoochee valley, some of which are 200 feet higher than the low terrace. They consist of 5 to 40 feet of weathered sand, gravel, and clay. The high terrace deposits supply water adequate for domestic and stock supply to dug wells in some parts of the county.

GROUND WATER

SOURCE

Ground water is water that occurs in the earth's zone of saturation. Ground water is derived from precipitation, and in Russell County the precipitation is generally rain. A part of the precipitation flows into streams and lakes as direct runoff, a part returns to the atmosphere through evaporation and transpiration, and a part seeps downward through the soil and rocks to become ground water.

Water percolating down through the soil first enters a zone of aeration (fig. 5), which lies between the land surface and the zone of saturation. A part of the water entering the zone of aeration is used to satisfy soil-moisture requirements, being held in this zone by molecular forces which counteract the force of gravity, and a part percolates to the water table and into the zone of saturation. All openings in the zone of saturation are filled with water, and it is the water from this zone that is discharged by wells and springs.

OCCURRENCE AND STORAGE

Ground water occupies pores, fractures, and solution openings in rocks. The size, shape, and distribution of the openings in the rocks vary considerably from place to place and from rock type to rock type. These openings affect the storage and movement of ground water. The porosity of a rock is the ratio, expressed as a percentage, of open space in the rock to its total volume.

The permeability of a rock is its capacity to transmit water. A rock with high permeability will yield water readily, whereas one

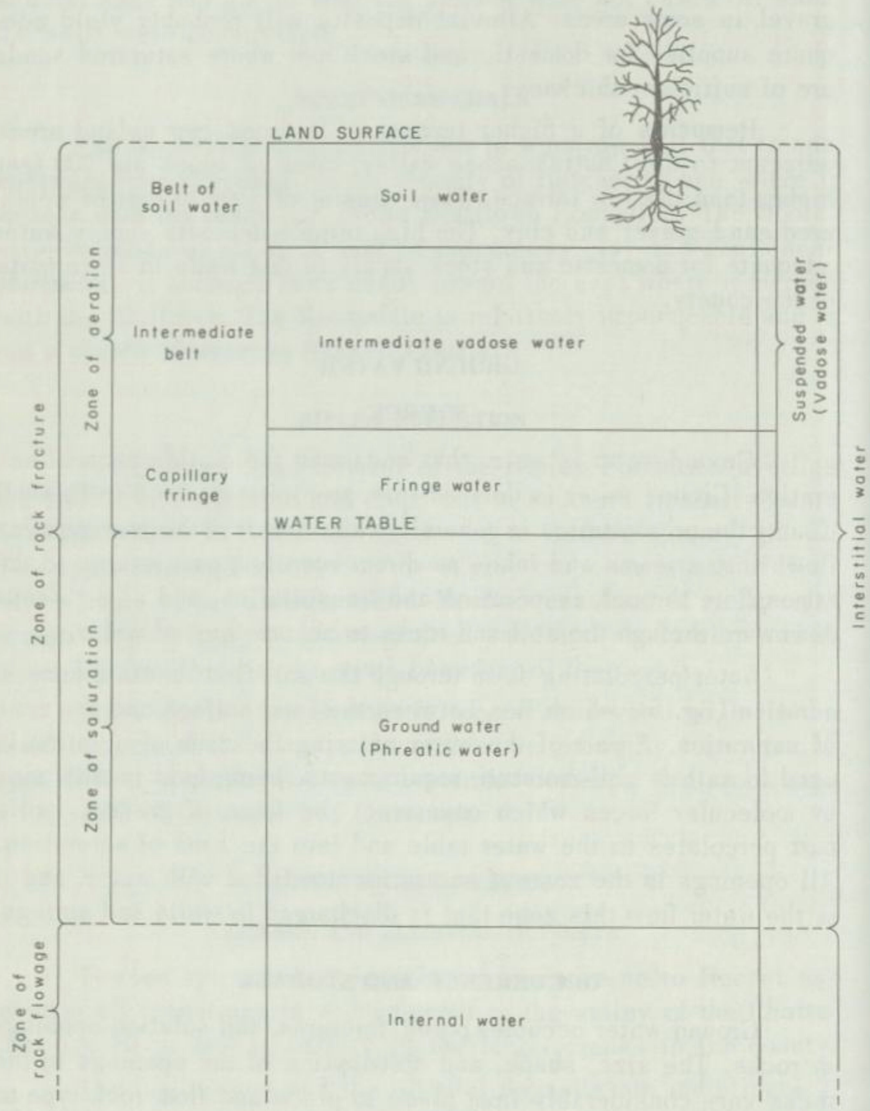


Figure 5.—Diagram showing divisions of subsurface water.

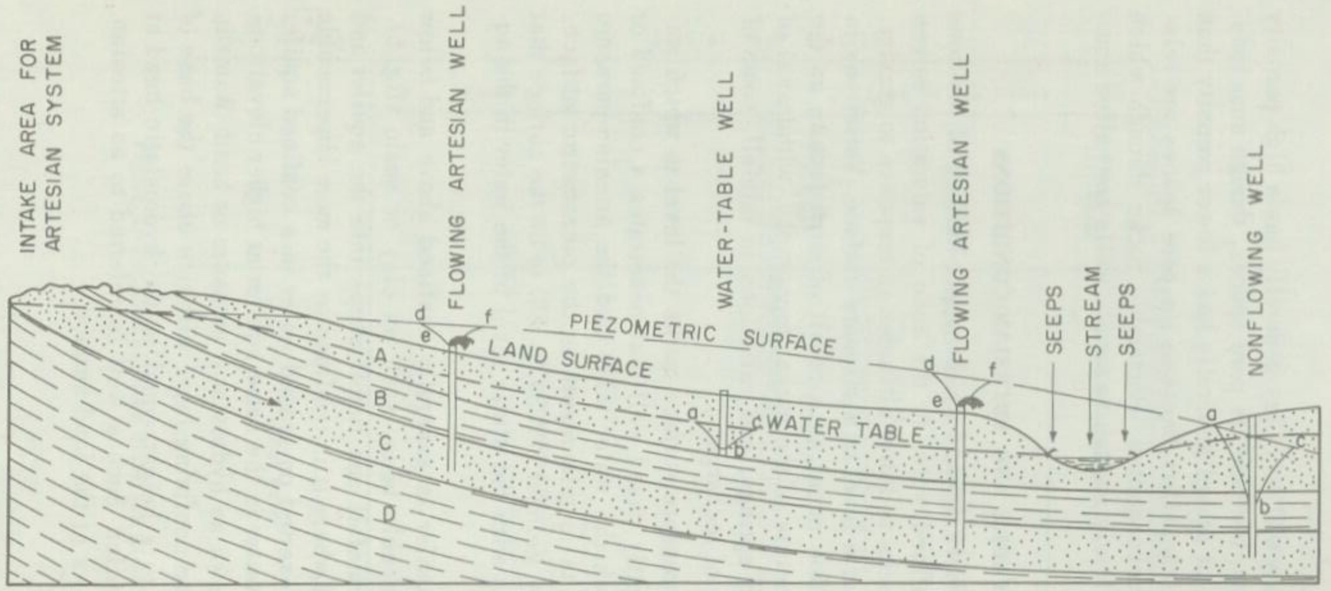
with a low permeability will not. Clay generally has a high porosity but a low permeability, because its pore spaces, though numerous, are very small. Sand or gravel generally has a lower porosity than clay but a higher permeability because its pore spaces are relatively large and interconnected. Permeable rocks through which ground water moves freely enough to supply wells are called aquifers.

WATER-TABLE AND ARTESIAN CONDITIONS

The water table is defined as the upper surface of the zone of saturation. Unconfined water in the zone of saturation moves slowly through the rocks to lower altitudes in response to gravity. The water table is not a level or stationary surface. Variations in its shape and elevation occur as a result of such factors as the permeability and structure of the rocks, topography, withdrawal of water from wells and springs, and variations in rainfall, some of which affect the rate of recharge.

The artesian pressure surface marks the level to which water will rise in a tightly cased well that penetrates a confined or artesian aquifer. Both the water table and the artesian-pressure surface are referred to in this report as the piezometric surface, which was defined by Meinzer (1923a, p. 38) to be the surface that everywhere coincides with the static level of the water in the aquifer.

An artesian aquifer is generally confined above and below by relatively impermeable beds, such as clay or shale (fig. 6). Water derived from rainfall and runoff seeps into the aquifer and percolates downward where it is confined by the more impermeable beds. The pressure exerted on ground water in a confined aquifer is the weight of the water in the same aquifer at higher elevations. This pressure is known as hydrostatic pressure or head. Water in a well penetrating the confining layer will rise above the base of the confining layer to a height equal to the hydrostatic head at that point in the aquifer. Such a well is referred to as artesian, whether or not it flows at the land surface.



A. Permeable surficial material B. Upper confining bed C Artesian aquifer D. Lower confining bed

abc Cone of depression caused by pumping a water-table or a nonflowing artesian well.

def Cone of depression caused by natural discharge from flowing artesian well.

Figure 6.—Schematic diagram showing artesian and water-table conditions.

Ground water occurs under both water-table and artesian conditions in Russell County. Water-table conditions prevail in the terrace and alluvial deposits and in the outcrop areas of the Cretaceous rocks in the county.

Water occurs under artesian conditions in the Tuscaloosa Group and in the Eutaw, Blufftown, and Ripley Formations in most parts of the county. It occurs under artesian conditions in the pre-Cretaceous rocks in some areas. Flows can be obtained from wells tapping the Tuscaloosa Group, the Eutaw Formation, and the Blufftown Formation adjacent to the Chattahoochee River and in some of the larger creek valleys (pl. 1). Flows from wells in the county range from less than 1 to 16 gpm. Flows of 25 gpm or more could probably be obtained in some areas.

DEPTH OF WELLS

The depth of a well is one of the prime factors that controls the cost of a ground-water supply. Figures 7 and 8 were prepared to aid in estimating the depth necessary to drill a well tapping the Tuscaloosa Group and the Eutaw Formation, respectively, in various parts of Russell County. The estimated depths shown were determined from records of existing wells and other available hydrologic and geologic information. The depth of wells tapping the Blufftown Formation in central and southern parts of the county is generally less than 200 feet.

WATER-LEVEL FLUCTUATIONS AND THEIR SIGNIFICANCE

Water-level fluctuations generally can be correlated with recharge or lack of recharge to ground-water reservoirs, withdrawals by pumping, flows from wells and springs, variations in atmospheric pressure, ocean and earth tides, and earthquakes.

Water-level fluctuations in shallow wells in Russell County are usually seasonal or cyclic and are related directly to precipitation. The water levels are highest in early spring because of the large amount of recharge from frequent winter rains and the low evapotranspiration rate. They generally are lowest during late autumn or early winter. Normally, the water table begins a gradual rise during the latter part of November, which continues until the

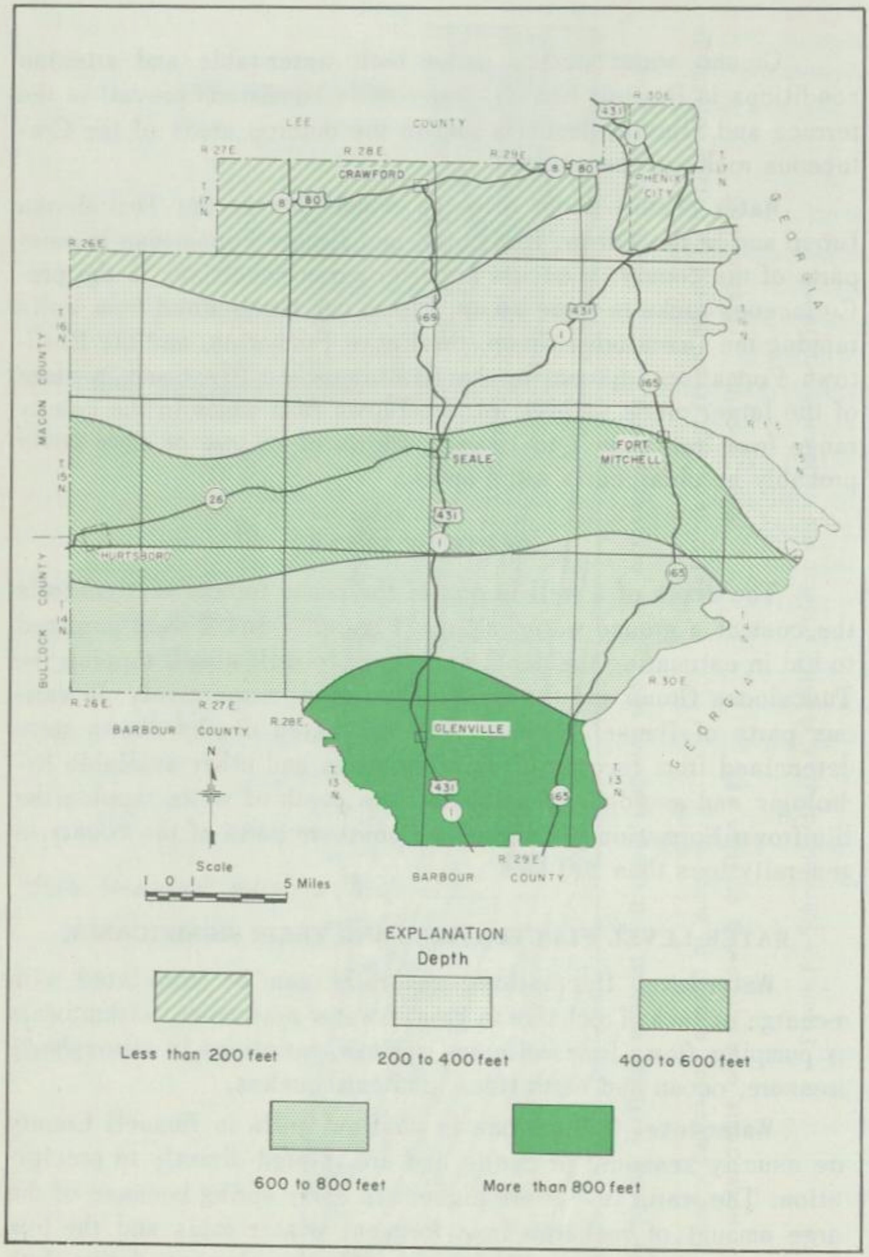


Figure 7.—Map showing approximate depths of wells tapping an aquifer in the Tuscaloosa Group.

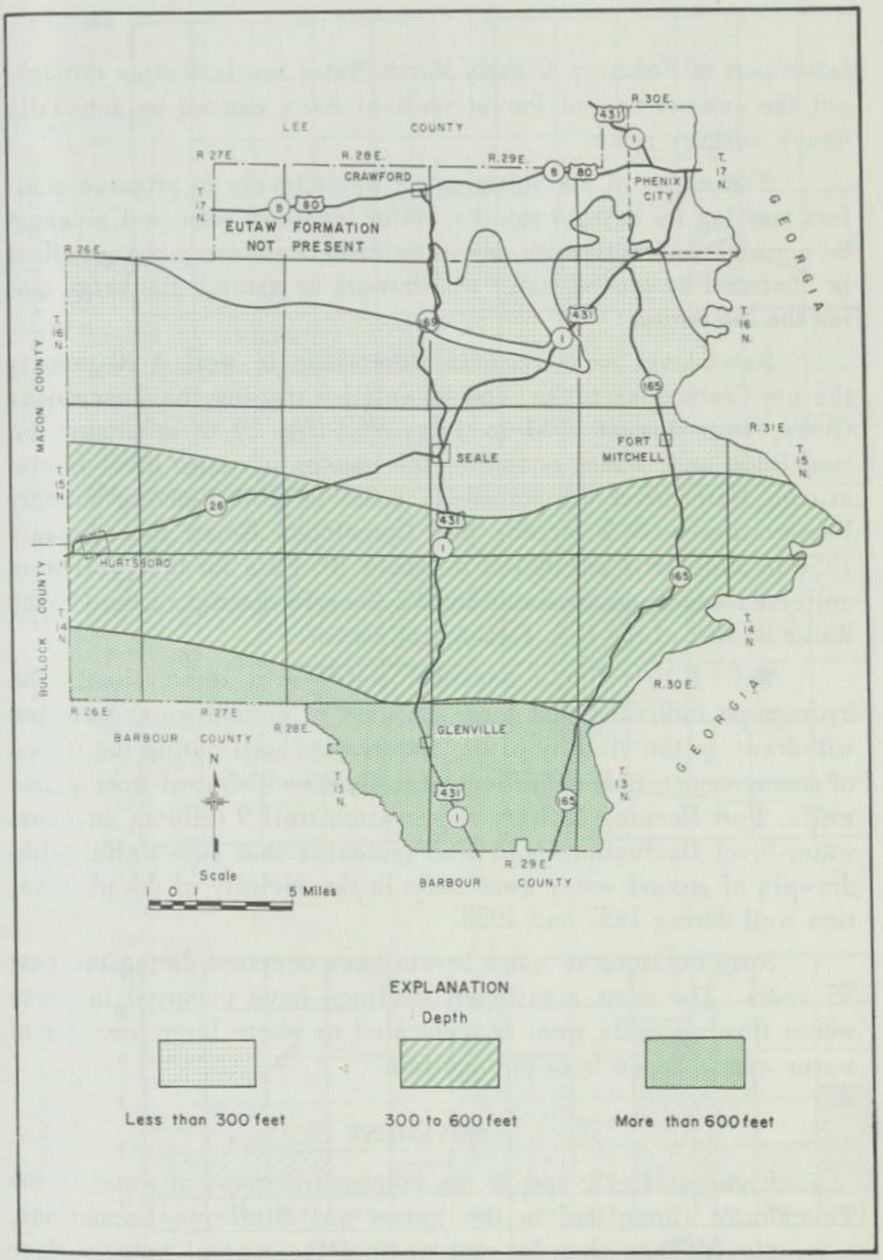


Figure 8.–Map showing approximate depths of wells tapping an aquifer in the Eutaw Formation.

latter part of February or early March. Water levels decline throughout the summer except for intermittent rises caused by unusually heavy summer rains.

The effect of precipitation on water levels in artesian aquifers may lag for days or months. Water levels in some wells cannot be correlated directly with precipitation because the recharge effect is obscured by ground-water withdrawals or natural discharge during the lag period.

Water-level measurements were made in well A-10 tapping the pre-Cretaceous rocks, and in well I-9 tapping the Tuscaloosa Group, from August 1961 to July 1962 (fig. 9) to determine the magnitude and, where possible, the causes of water-level fluctuations. Water-level measurements made in Fort Benning Military Reservation well 9 tapping the Tuscaloosa Group from January 1956 to June 1961 are shown in figure 10. Data for this well were collected and made available by the Georgia district of the Ground Water Branch of the U.S. Geological Survey.

Well A-10 reflects seasonal water-level fluctuations. The hydrograph indicates that large amounts of ground water were not withdrawn in the vicinity of the observation well during the period of measurement. Well I-9 reflects chiefly the withdrawal from nearby wells. Fort Benning Military Reservation well 9 reflects seasonal water-level fluctuations and also indicates that substantial withdrawals of ground water were made in the vicinity of the observation well during 1957 and 1958.

Some declines in water levels have occurred during the past 55 years. The most significant declines have occurred in areas where flowing wells were concentrated or where large amounts of water were pumped from the aquifers.

MOVEMENT

Figures 11, 12, and 13 are piezometric maps of water in the Tuscaloosa Group and in the Eutaw and Blufftown Formations, respectively. They show by contour lines the general water surface in wells tapping these aquifers and the direction of movement of ground water. The water moves from places where the piezometric surface is high toward places where it is low, and in the direction

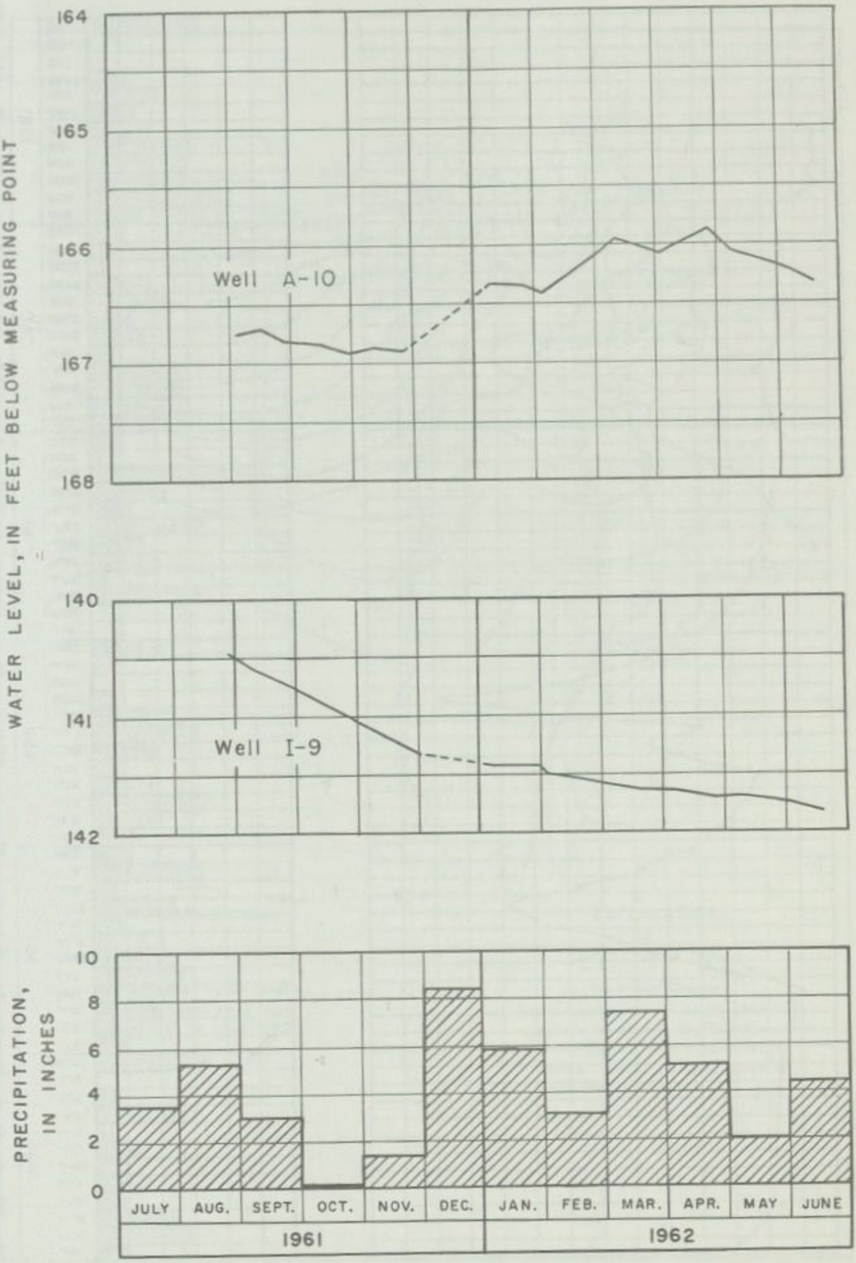


Figure 9.—Fluctuation of water levels in wells A-10 and I-9 and precipitation at Phenix City, 1961-62.

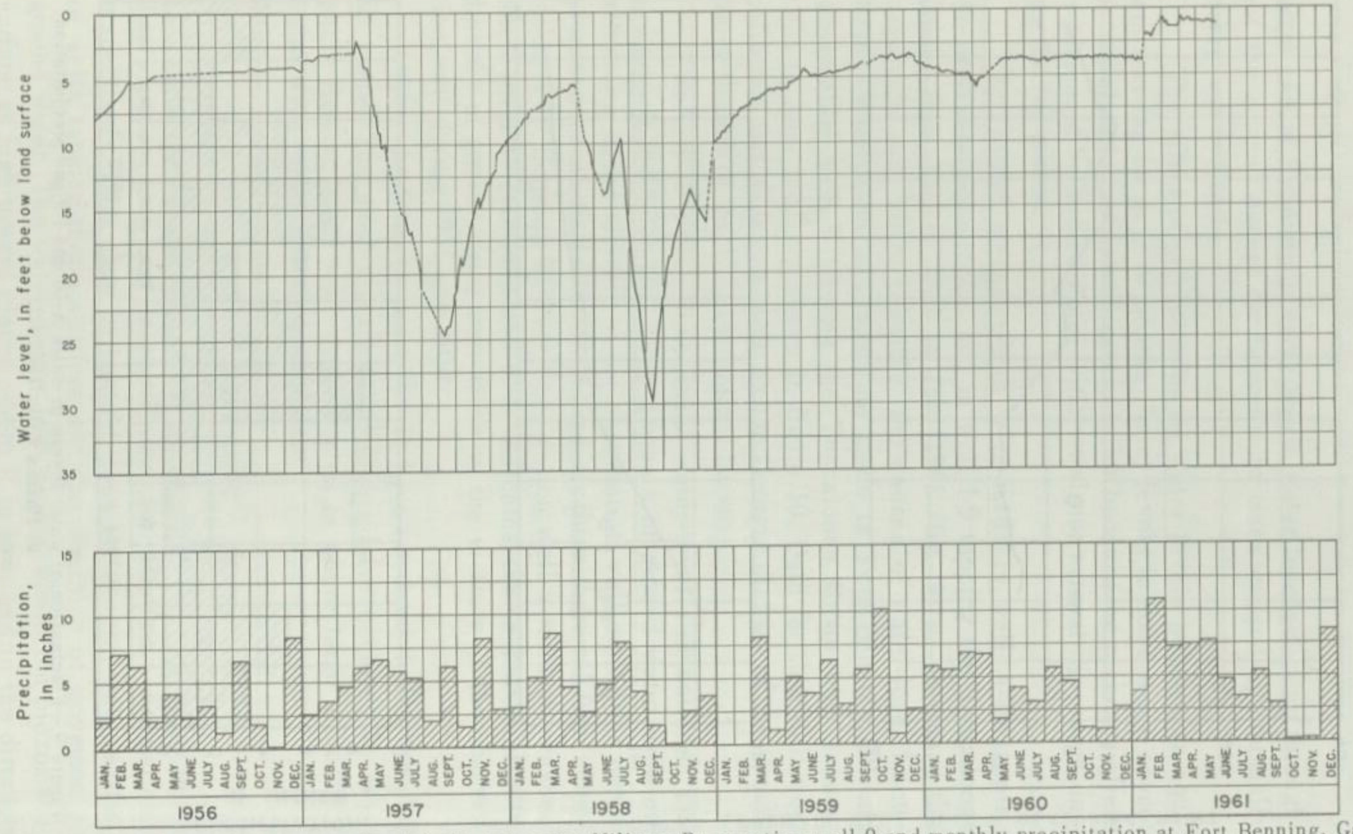


Figure 10.—Fluctuation of water level in Fort Benning Military Reservation well 9 and monthly precipitation at Fort Benning, Ga., 1956-61.

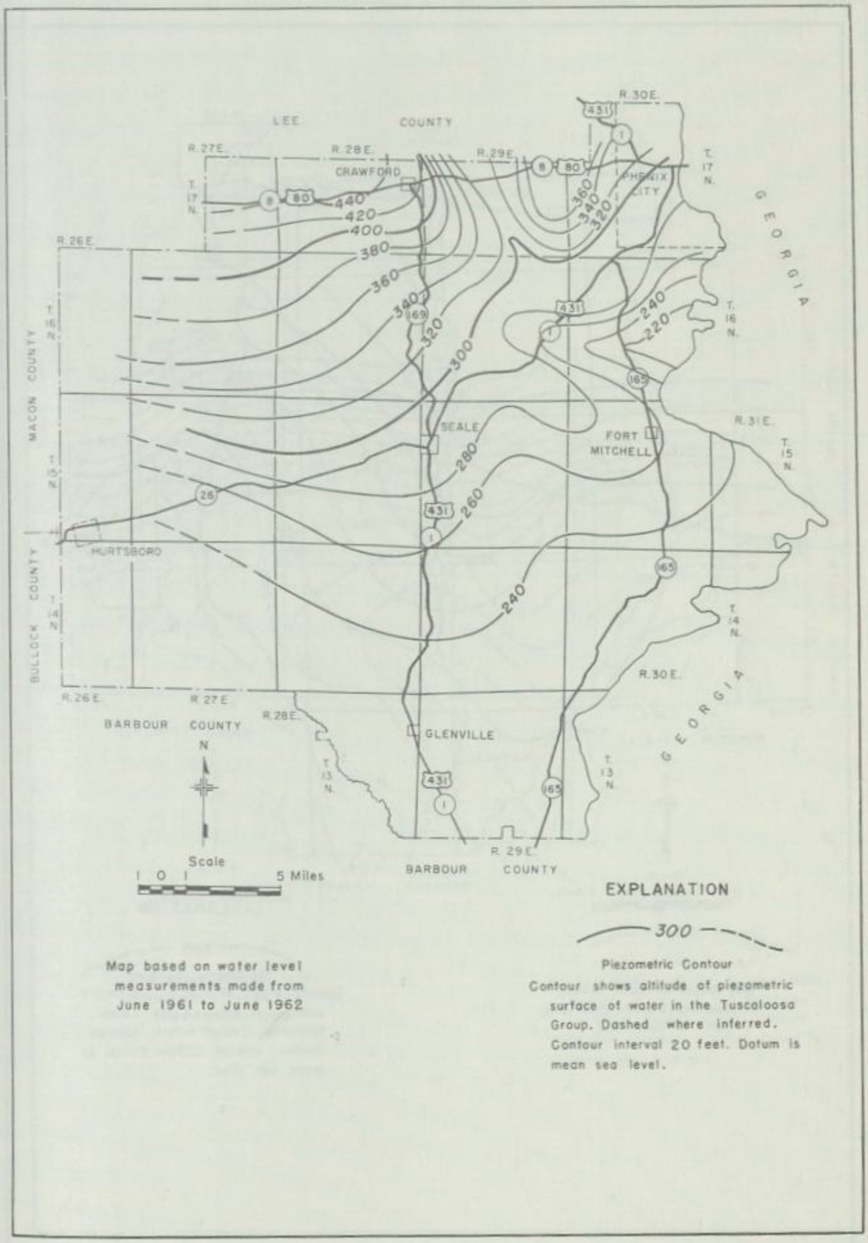


Figure 11.—Map of the piezometric surface of water in the Tuscaloosa Group.

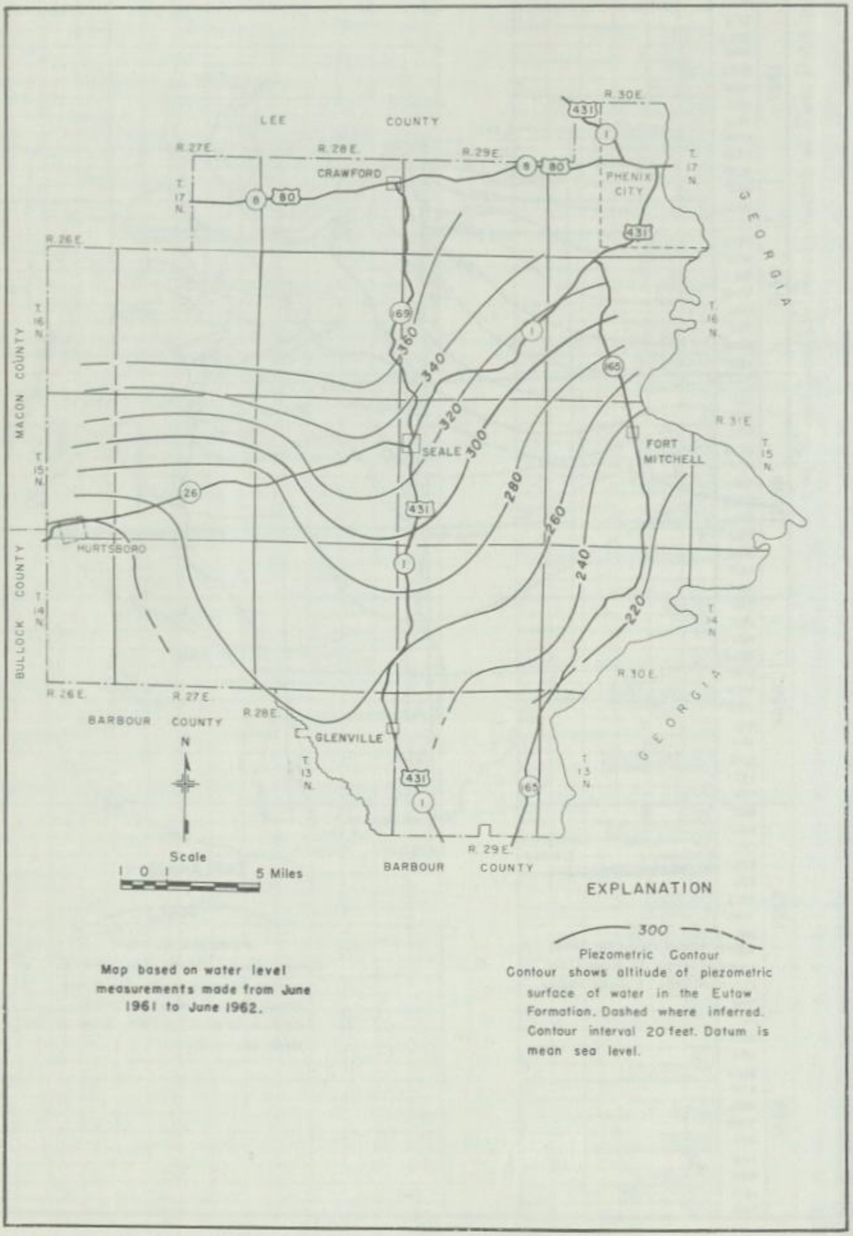


Figure 12.–Map of the piezometric surface of water in the Eutaw Formation.

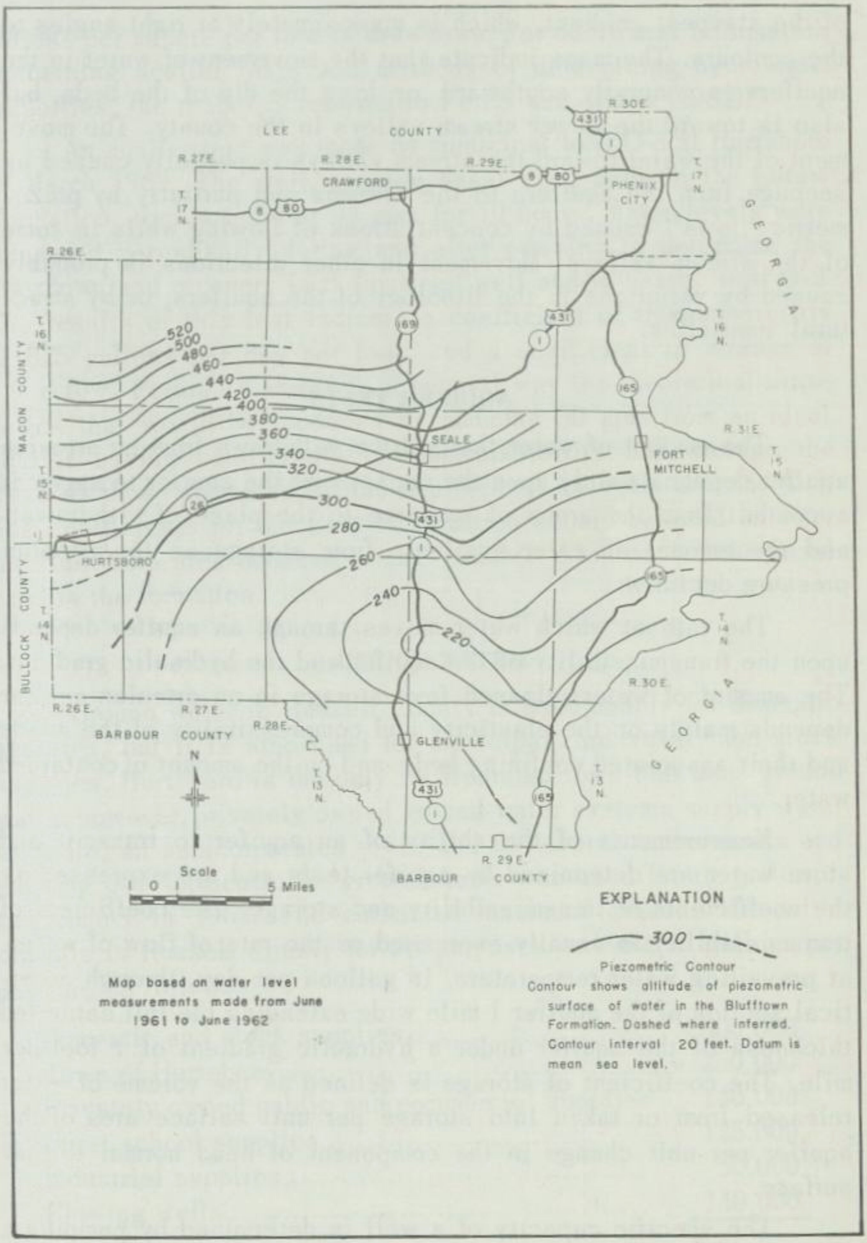


Figure 13.—Map of the piezometric surface of water in the Blufftown Formation.

of the steepest gradient, which is approximately at right angles to the contours. The maps indicate that the movement of water in the aquifers is generally southward, or down the dip of the beds, but also is toward the larger stream valleys in the county. The movement of the water toward the stream valleys is partially caused by seepage from the aquifers to the streams and partially by piezometric "lows" caused by concentrations of flowing wells in some of the stream valleys. Movement in other directions is probably caused by variations in the lithology of the aquifers, or by structural anomalies.

AQUIFER TESTS

The amount of water that can be withdrawn from an artesian aquifer depends mainly upon the capacity of the aquifer to serve as a conduit from the areas of recharge to the place of withdrawal, and the amount of water available from storage as the artesian pressure declines.

The rate at which water moves through an aquifer depends upon the transmissibility of the aquifer and the hydraulic gradient. The amount of water released from storage in an artesian aquifer depends mainly on the elasticity and compressibility of the sands and their associated confining beds, and on the amount of contained water.

Measurements of the ability of an aquifer to transmit and store water are determined by aquifer tests and are expressed as the coefficients of transmissibility and storage. The coefficient of transmissibility is usually expressed as the rate of flow of water, at prevailing water temperature, in gallons per day, through a vertical section of the aquifer 1 mile wide extending the full saturated thickness of the aquifer under a hydraulic gradient of 1 foot per mile. The coefficient of storage is defined as the volume of water released from or taken into storage per unit surface area of the aquifer per unit change in the component of head normal to that surface.

The specific capacity of a well is determined by pumping a well and is the rate of yield per unit measurement of drawdown in the well. The specific capacity of a well is usually expressed in

gallons per minute per foot of drawdown. For additional information concerning aquifer tests and methods of determining hydrologic properties, the reader is referred to Ferris and others (1962).

An aquifer test was made on municipal well O-3 at Hurtsboro in March 1962. The well, tapping basal sand beds in the Eutaw Formation, was pumped at 94 gpm for 10 hours. Water levels were measured periodically during and after pumping to determine the drawdown and recovery in the pumped well and in nearby well O-2. The results of this test indicate a coefficient of transmissibility of 825 gallons per day per foot, and a coefficient of storage of 3.9×10^{-4}. Figure 14 shows in a general way the theoretical drawdowns that would be produced by pumping 50 gpm from an ideal aquifer having coefficients of transmissibility and storage the same as those computed for the aquifer test on wells O-2 and O-3. The coefficients for the Eutaw Formation should be used only for the Hurtsboro area because of the variable thickness of the basal sand in the formation.

USE OF WATER

Ground water in Russell County is used mainly for domestic supplies, but it is also used for municipal, industrial, and stock supplies. Hurtsboro is the only incorporated town that uses ground water; however, privately owned ground-water systems supply water to Seale, an unincorporated town, and to several trailer parks and housing developments. No ground water was used for irrigation in the county in 1962. The estimated maximum ground-water withdrawals in Russell County for all purposes in 1962, in gallons per day, are as follows:

Domestic and stock supplies	500,000
Town of Hurtsboro	250,000
Privately owned public and commercial supplies	140,000
Rural school supplies	125,000
Industrial supplies	50,000
Flowing wells	140,000
Total	1,205,000

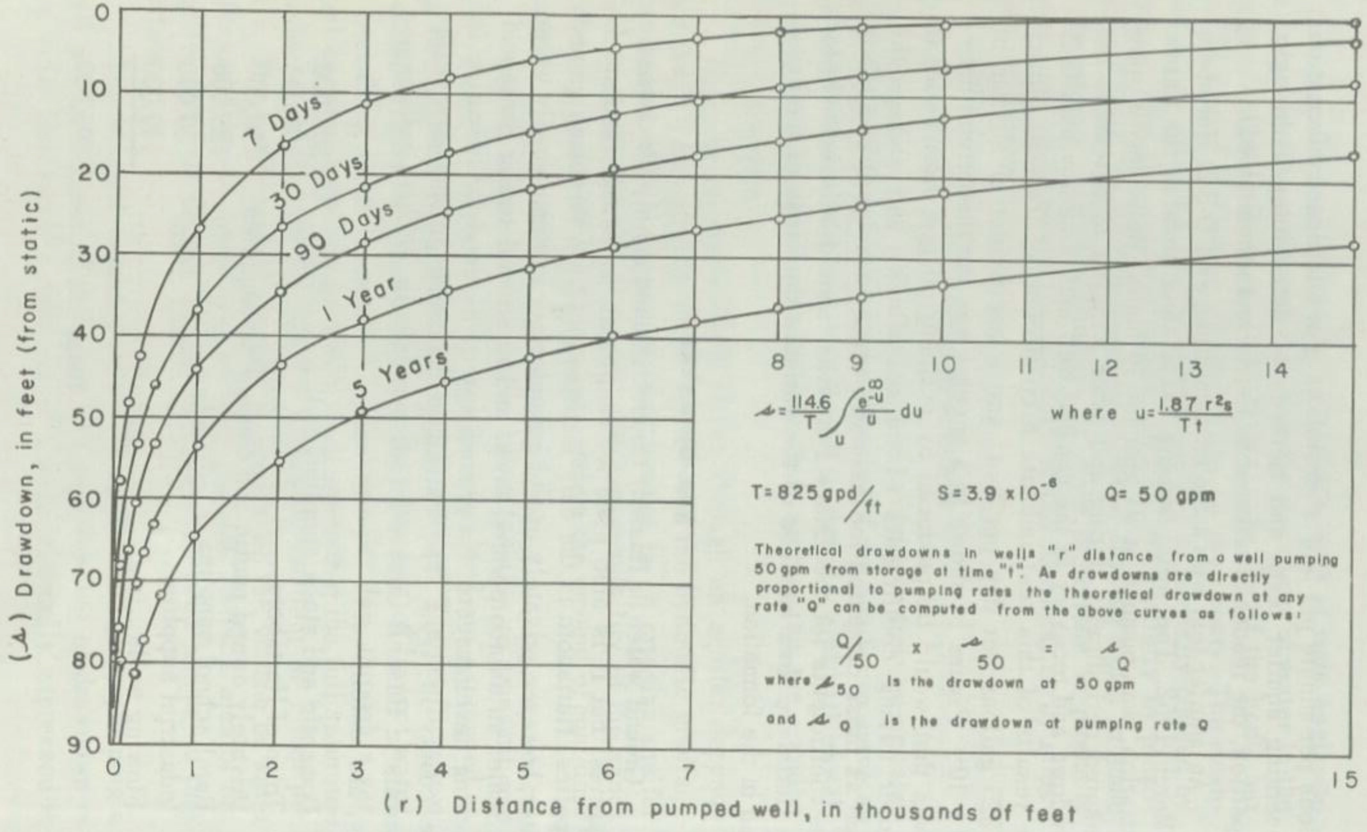

0
10
20
30
40
50
60
70
80
90
(s) Drawdown, in feet (from static)
7 Days
30 Days
90 Days
1 Year
5 Years
0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15
(r) Distance from pumped well, in thousands of feet
$s = \frac{114.6}{T}\int_u^\infty \frac{e^{-u}}{u}\,du$ where $u = \frac{1.87\,r^2 s}{Tt}$
T = 825 gpd/ft S = 3.9 x 10⁻⁶ Q = 50 gpm
Theoretical drawdowns in wells "r" distance from a well pumping 50 gpm from storage at time "t". As drawdowns are directly proportional to pumping rates the theoretical drawdown at any rate "Q" can be computed from the above curves as follows:
$\frac{Q}{50} \times s_{50} = s_Q$
where s_{50} is the drawdown at 50 gpm
and s_Q is the drawdown at pumping rate Q

Figure 14.—Theoretical drawdown in an ideal aquifer, having coefficients of transmissibility and storage the same as those computed for the aquifer test on wells O-2 and O-3 tapping the Fuson Formation at Hyrum

QUALITY OF WATER

Water that falls as rain or snow contains only small quantities of dissolved mineral matter, but upon reaching the ground it begins to dissolve minerals from the soil and rocks. The amount and kind of minerals dissolved in ground water vary greatly from place to place, depending upon such factors as the amount and type of organic material in the soil, the type of rocks through or over which the water moves, the length of time the water is in contact with the soil and rocks, and the temperature of the water. Some rocks contain rather soluble salts, and, as a result, water passing through or over them will become highly mineralized. Other rocks contain relatively insoluble minerals, and the water passing through or over them will dissolve only small amounts of mineral matter. Nearly all ground water contains calcium because it is readily dissolved from deposits of limestone, gypsum, dolomite, and other calcareous rocks. Other constituents common in ground water are silica, iron, manganese, magnesium, sodium, potassium, bicarbonate, carbonate, sulfate, chloride, fluoride, and nitrate.

The chemical character of water may restrict its use for municipal, industrial, domestic, or irrigation supplies. Standards for drinking water established by the U.S. Public Health Service (1962) to control the quality of water for use on interstate carriers, are usually quoted as standards for drinking water. According to these standards, iron should not exceed 0.3 ppm (part per million); manganese should not exceed 0.05 ppm; sulfate should not exceed 250 ppm; chloride should not exceed 250 ppm; fluoride (in Russell County) should not exceed 1.0 ppm; nitrate should not exceed 45 ppm; and total dissolved solids should not exceed 500 ppm. Excessive fluoride in drinking water may cause mottled enamel of children's teeth if the water is used continuously during the period of calcification of the teeth—that is, roughly during the first 6 to 8 years of life (Dean and others, 1942).

The iron content of water is considered excessive in this report if it is greater than 0.3 ppm or if it causes objectionable staining. Iron and manganese are the two most common minerals that stain plumbing fixtures and produce "red water."

The hardness of water is undesirable for domestic and industrial use when it greatly increases soap consumption or deposits scale in pipes, heating equipment, and boilers. General terms are used in this report to describe hardness. The terms and the range in hardness that govern the use of each are as follows: soft, 0 to 60 ppm; moderately hard, 61 to 120 ppm; hard, 121 to 180 ppm; and very hard, 181 ppm or more.

The hardness and chloride content of water from most wells inventoried were determined by preliminary chemical analysis (table 2). The results of more comprehensive chemical analyses of water from 23 selected wells used for public and domestic supplies in Russell County are given in table 3. These analyses indicate that ground water of good quality can be obtained in most sections of the county. Locally, ground water is objectionable because it is hard or contains excessive amounts of iron, manganese, or sulfate.

Water from the pre-Cretaceous crystalline rocks is moderately hard to very hard and contains excessive amounts of iron, sulfate, and other minerals in some areas of northeastern Russell County. Mineralization of water in the crystalline rocks appears to increase with depth.

Water from the Tuscaloosa Group is soft to moderately hard (fig. 15) and is generally of good chemical quality throughout most of the county. The hardness is less than 60 ppm in most areas. Some wells tapping the Tuscaloosa Group in the northeastern part of the county yield water that contains excessive iron and manganese.

The hardness of water in the Eutaw Formation ranges from soft to very hard but is less than 120 ppm in most areas (fig. 16). It generally contains excessive iron in the central part of the county. Hurtsboro, which obtains water from the Eutaw Formation, treats its water supply for the removal of iron and hardness-forming minerals.

Water from the Blufftown Formation is soft to very hard (fig. 17) and contains excessive iron in some areas, but is otherwise of good chemical quality. The hardness of water in the formation generally exceeds 75 ppm in most of the area of withdrawal.

Chemical-quality data for water from the Cusseta Sand Member of the Ripley Formation and the terrace and alluvial deposits are

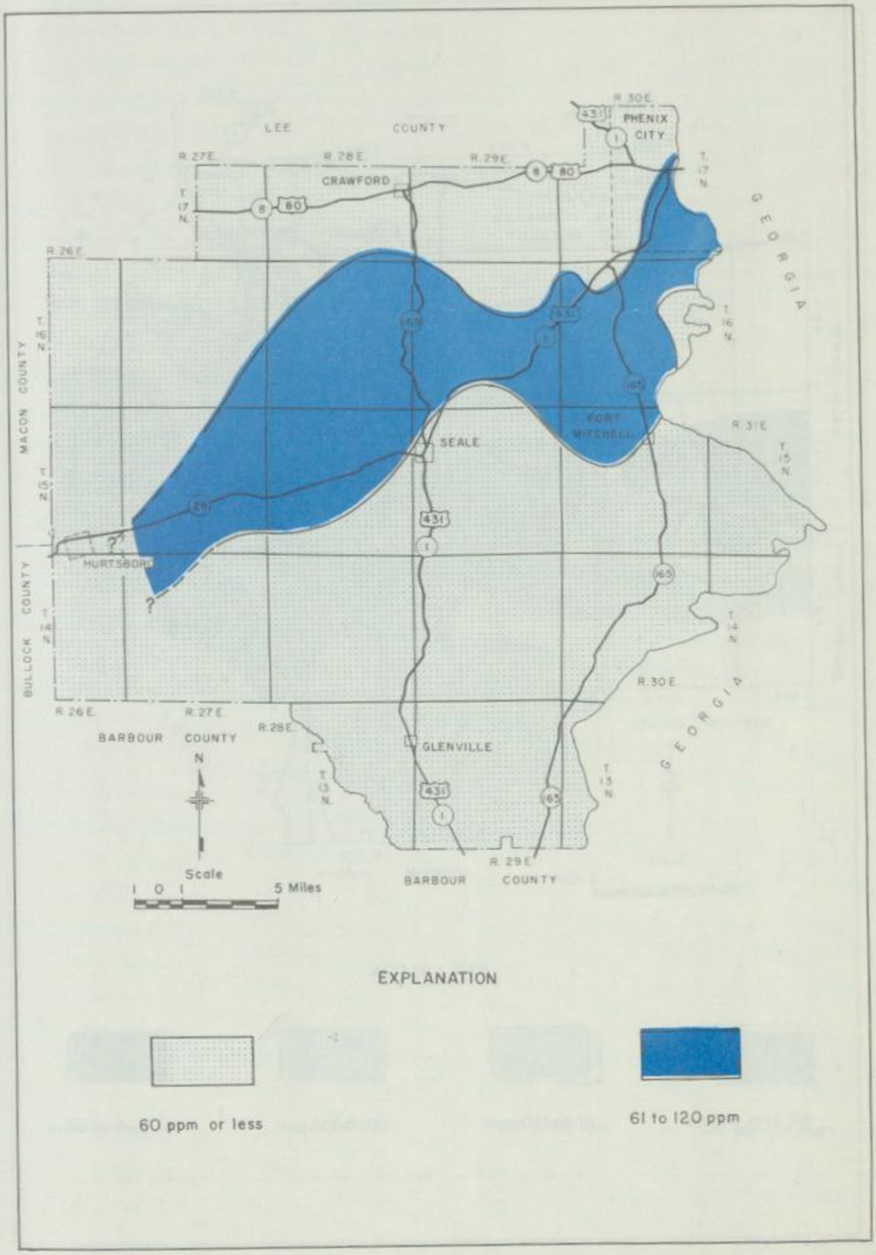


Figure 15.—Distribution of hardness of water in the Tuscaloosa Group.

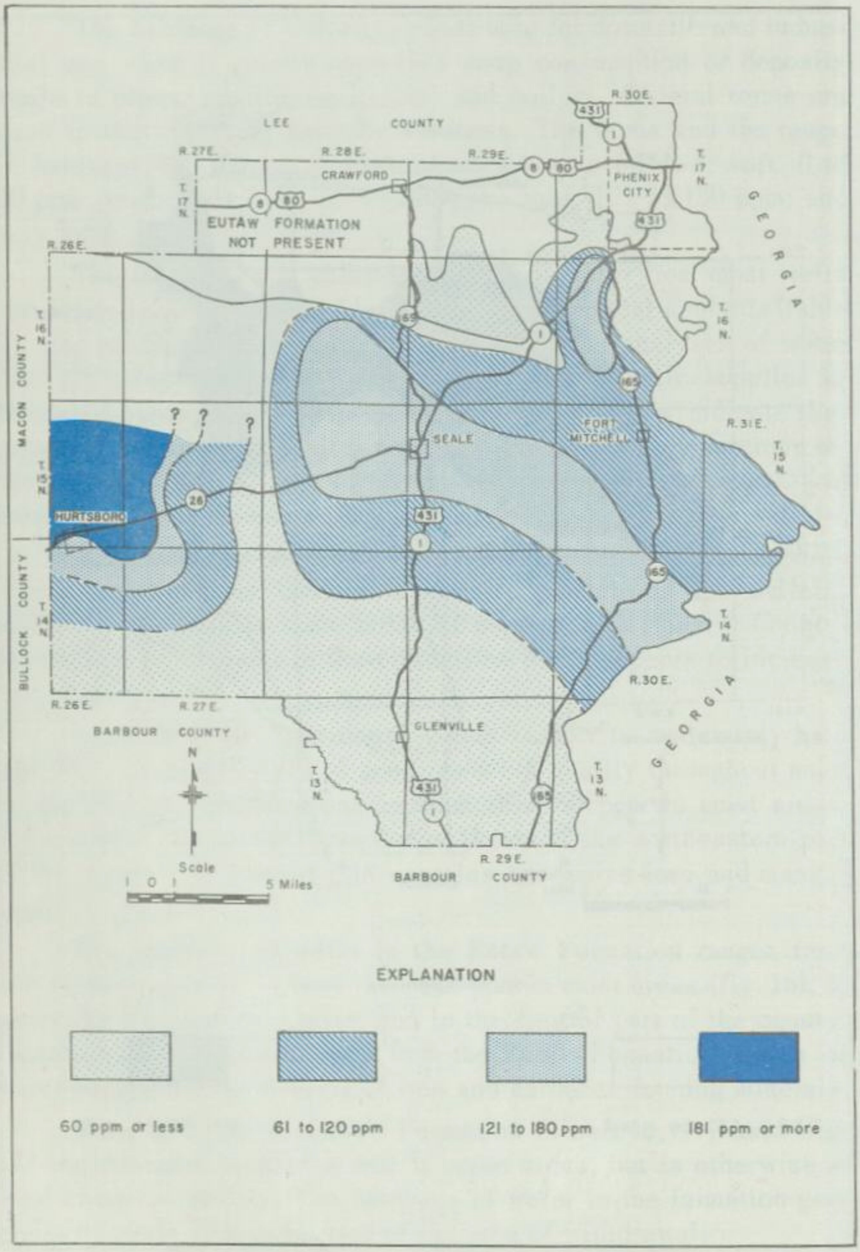


Figure 16.—Distribution of hardness of water in the Eutaw Formation.

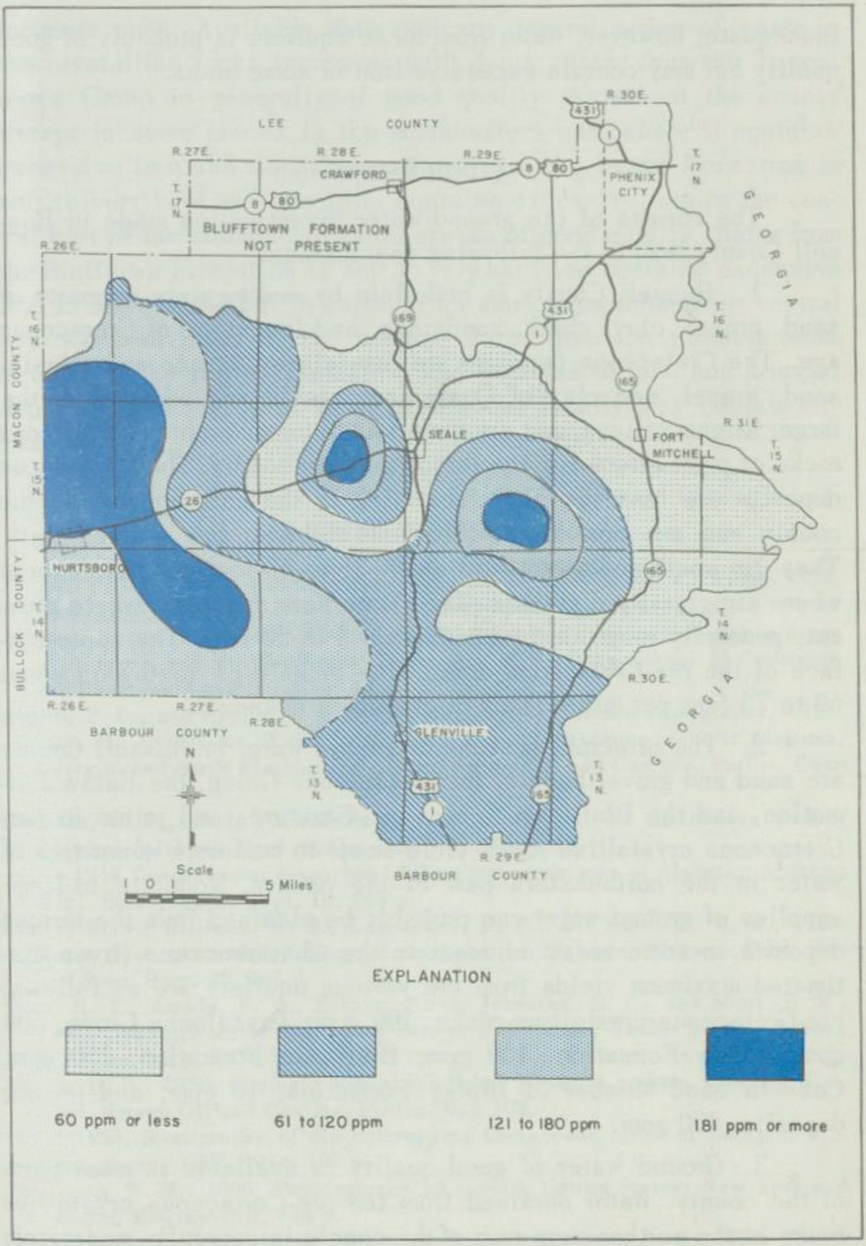


Figure 17.—Distribution of hardness of water in the Blufftown Formation.

inadequate; however, water from these aquifers is probably of good quality but may contain excessive iron in some areas.

CONCLUSIONS

The results of the ground-water investigation made in Russell County lead to the following conclusions:

1. Russell County is underlain by sedimentary deposits of sand, gravel, clay, chalk, sandstone, and limestone of Cretaceous age. The Cretaceous deposits are overlain by terrace and alluvial sand, gravel, and clay of Quaternary age in and adjacent to the larger stream valleys, and are underlain by metamorphic and igneous rocks of pre-Cretaceous age throughout the county. The Cretaceous deposits are less than 100 feet thick in the northern part of the county and are more than 1,500 feet thick in the southern part. They dip south-southwestward about 35 to 45 feet per mile except where structurally disturbed. The Quaternary deposits, where present, generally range in thickness from 5 to 50 feet. The upper surface of the pre-Cretaceous crystalline rocks dips southward about 60 to 75 feet per mile. Their thickness is unknown.

2. The principal sources of ground water in Russell County are sand and gravel beds in the Tuscaloosa Group, the Eutaw Formation, and the Blufftown Formation. Fractures and joints in pre-Cretaceous crystalline rocks yield small to moderate quantities of water in the northeastern part of the county. Moderate to large supplies of ground water can probably be obtained from the terrace deposits in some areas adjacent to the Chattahoochee River. Estimated maximum yields from the various aquifers are as follows: pre-Cretaceous crystalline rocks, 100 gpm; Tuscaloosa Group, 500 gpm; Eutaw Formation, 100 gpm; Blufftown Formation, 150 gpm; Cusseta Sand Member of Ripley Formation, 10 gpm; and terrace deposits, 100 gpm.

3. Ground water of good quality is available in most parts of the county. Water obtained from the pre-Cretaceous crystalline rocks in the northeastern part of the county is generally moderately hard to very hard and, in some places, contains excessive iron, sulfate, and other objectionable minerals; however, it is suitable

for most uses. Available data indicate mineralization of water in the crystalline rocks increases with depth. Water from the Tuscaloosa Group is generally of good quality throughout the county except in some places in the northeastern part where it contains excessive iron and manganese. Water from the Eutaw Formation is soft to very hard and generally contains excessive iron in the central part of the county, but is otherwise of good quality. Water from the Blufftown Formation is soft to very hard and contains excessive iron in some areas but is suitable for most uses throughout central and southern parts of the county. Water from the Cusseta Sand Member of the Ripley Formation and from the terrace and alluvial deposits is probably of good quality but locally may contain excessive iron.

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BASIC DATA

Table 2. --Records of wells

Well: Asterisk preceding well number indicates chemical analysis given in table 3.

Type: D, drilled or bored; Du, dug.

Depth of well and water level: Reported depths below land surface are given in feet; measured depths are given in feet and tenths.

Altitude: Determined by aneroid barometer.

Method of lift: Cf, centrifugal or shallow-well piston; Cy, cylinder; F, flowing; J, jet; M, manual; N, none; T, turbine.

Use of water: D, domestic; Ind, industrial; N, none; O, observation; P, public supply; S, stock.

Water-bearing unit: pK, pre-Cretaceous; Kt, Tuscaloosa Group; Ke, Eutaw Formation; Kb, Blufftown Formation; Krc, Cusseta Sand Member of Ripley Formation; Qt, terrace deposits.

Well	Owner	Driller	Type	Depth of well (feet)	Diameter of well (inches)	Water-bearing unit	Altitude of land surface (feet)	Water level		Method of lift	Use of water	Field determinations			Remarks
								Above (+) or below land surface (feet)	Date of measurement			Temperature (° F)	Chloride (Cl) (ppm)	Hardness as $CaCO_3$ (ppm)	
A-1	B. and H. Oil Co . .	Virginia Supply and Well Co.	D	300	6	pK	. . .	. . . .	. . . . .	T	P	. .	18	142	
A-2	Cloyd Tillery	Robertson Drilling Co .	D	355	6	pK	. . .	. . . .	. . . . .	T	D	. .	18	256	Casing: 6-in. to 40 ft.; none below. Reported yield, 60 gpm in 1961.
A-3	. . . . do	. . . . do	D	175	6	pK	. . .	. . . .	. . . . .	J	D	. .	18	262	Casing: 6-in. to 40 ft.; none below. Reported yield, 7 gpm in 1961.
* A-4	A. A. Harris	. . . . .	D	125	6	pK	352	18.0	6-19-61	J	D	. .	11	202	Supplies 8 homes.
A-5	Mrs. George G. Wallace.	Robertson Drilling Co .	D	210	6	pK	340	11.1	6-20-61	T	D	. .	18	334	Casing: 6-in. to 32 ft.; none below. Reported yield, 40 gpm in 1961.
A-6	Neaty's Motel	Johnson Drilling Co . . .	D	185	6	pK	. . .	25	1961	J	P	. .	11	108	Casing: 6-in. to 150 ft.; none below. Reported yield, 100 gpm in 1961. Supplies 12-unit motel.
A-7	P. A. Vautrain	. . . . .	D	150	6	pK	. . .	. . . .	. . . . .	J	D	. .	4	26	
A-8	J. L. Lane	Virginia Supply and Well Co.	D	150	6	pK	. . .	. . . .	. . . . .	J	P	. .	11	46	Casing: 6-in. to 18 ft.; none below. Reported yield, 25 gpm in 1961.
A-9	Bamboo Motel	H. W. Peerson Drilling Supply Co.	D	253	6	pK	. . .	. . . .	. . . . .	T	P	. .	4	96	Casing: 6-in. to 37 ft.; none below. Supplies motel and restaurant.
A-10	Tom Raiford	Robertson Drilling Co .	D	312	6	pK	500	171.9	6-21-61	N	N, O	. .	. .	. . .	Reported yield, 21 gpm in 1958. Water-level fluctuations shown on fig. 9.

A-11	Radio Station WGBA	H. W. Peerson Drilling Supply Co.	D	414	4	Kt	620	280	1947	T	N	..	..	...	Casing: 4-in. to 395 ft.; 4-in. screen from 265 to 280 ft.; 2½-in. screen from 404 to 414 ft. Reported yield, 3 gpm in 1947. Abandoned because of insufficient supply and poor quality of water. See driller's log.
A-12	M. C. Wheolis	S. E. Miller.....	D	235	4	Kt	...	....	.....	N	N	..	..	...	Reportedly abandoned because of insufficient supply.
A-13	J. B. Putnam.....	Robertson Drilling Co .	D	489	6	pK	499	171.8	6-27-61	N	N	..	..	...	Casing: 6-in. to 350 ft.; none below. Reported yield, 13 gpm in 1959. Abandoned in 1960 because municipal supply was made available.
A-14	S. R. Pickard	S. E. Miller.....	D	50	6	Kt	475	24.9	6-27-61	J	D	..	11	38	Supplies 4 homes and service station.
A-15	J. M. Scroggins ...	.... do	D	150	4	Kt	...	....	.....	Cy	D	..	2	8	Casing: 4-in. to 140 ft.; none below.
A-16	W. L. Fuller.....	Gilbert Drilling Co ...	D	340	6	Kt	525	....	.....	T	D,S	..	1	26	Casing: 6-in. to 330 ft.; none below.
A-17	Charles L. Dawson.	.....	D	30	6	Kt	307	7.5	11-27-61	Cf	D	..	7	55	Abandoned in 1962 because municipal supply was made available.
A-18	W. C. Roney	S. E. Miller.....	D	171	6	Kt	...	....	.....	..	...	..	..	...	Water reported to be highly mineralized.
A-19	John T. Wilson....	Robertson Drilling Co .	D	130	8	Kt	...	....	.....	J	D,S	..	11	34	Casing: 8-in. to 118 ft.; none below. Test hole to 175 ft.
A-20	J. W. Wilson, Jr ..	.... do	D	121	6	Kt	...	....	.....	J	D	..	11	26	Casing: 6-in. to 100 ft.; none below.
A-21	Hoyt Zuber	.... do	D	220	6	Kt	...	....	.....	T	D,S	..	..	...	Supplies chicken farm, garden, and home. Water reported to be highly mineralized.
A-22	Cartersville Gas Co.	Layne-Central Co ...	D	220	..	Kt	...	26	1947	T	D	..	39	112	Casing: 6-in. to 200 ft.; 4-in. screen from 200 to 220 ft. Reported yield, 50 gpm in 1947. Test hole to 249 ft. See driller's log.
B-1	M. T. Reeves	S. E. Miller.....	D	268	4	Kt	470	25.8	6-28-61	Cy	N	..	..	...	Water reported to be highly mineralized.
B-2	Godwin Davis	.....	D	200	6	Kt (?)	345	10.1	6-28-61	J	P	..	11	12	
B-3	C. F. Barbee.....	.....	D	110	4	Kt	...	....	.....	Cy	D	..	4	28	Supplies 2 homes.
B-4	C. A. McElrey and Son.	S. E. Miller.....	D	96	4	Kt	305	+ 1.5	7- 5-61	F	S	67	4	26	Casing: 4-in. to 96 ft. Estimated discharge, less than 1 gpm on 7-5-61.
B-5	.... do	.... do	D	86	4	Kt	345	46.3	7- 5-61	T	D,S	..	11	28	Supplies 3 homes and dairy.
B-6	Raiford Realty Co ..	.... do	D	160	4	Kt	...	....	.....	J	N	..	..	...	
B-7	Jack Hightower....	.... do	D	200	4	Kt	429	54.8	6-28-61	J	D,S	..	4	26	Supplies home and chicken farm.
B-8	Joe Parkman (Boy Scout camp).	.....	D	400	4	Kt	298	+ 1.9	6-28-61	F	D	66	11	40	Casing: 4-in. to 375 ft.; none below. Estimated discharge, 5 gpm on 6-28-61.

Table 2. --Records of wells--Continued

Well	Owner	Driller	Type	Depth of well (feet)	Diameter of well (inches)	Water-bearing unit	Altitude of land surface (feet)	Water level		Method of lift	Use of water	Field determinations			Remarks
								Above (+) or below land surface (feet)	Date of measurement			Temperature (° F)	Chloride (Cl) (ppm)	Hardness as $CaCO_3$ (ppm)	
B-9	Parkman Farms....	.....	D	400	4	Kt	320	4	6-28-61	F	D	68	11	56	Estimated discharge less than 1 gpm on 6-28-61.
B-10	M. C. Boswell.....	-- Prestwood.....	D	165	4	Kt	...	....	.....	Cy	D,S	..	4	12	Casing: 4-in. to 160 ft.; none below. Supplies 4 homes and dairy.
C-1	O. H. Baker.....	.....	Du	36.0	30	Kt	450	24.5	7- 5-61	J	D	..	57	12	Supplies 2 homes.
C-2	....do.....	.....	Du	21.6	30	Kt	443	9.0	7- 5-61	J	P	..	..	...	Supplies garage.
*C-3	Dixie High School...	.....	D	61.0	6	Kt	469	14.0	6-14-61	J	P	..	11	4	Estimated yield, 5 gpm on 6-14-61. Supplies 200 students and lunch room.
*C-4	Calico Farms.....	-- Brown.....	D	175	6	pK	437	47.4	6-14-61	T	D	..	4	28	Casing: 6-in. to 120 ft.; none below. Reported yield, 10 gpm in 1957.
D-1	M. B. Herring....	S. E. Miller.....	D	155	6,2	Kt	...	....	.....	Cy	D	..	4	10	
D-2	Mrs. O. J. Gunter.	.....	Du	26.6	24	Kt	442	13.9	6-13-61	J	D	..	18	22	Insufficient supply in dry seasons.
D-3	Wills Valley School.	.....	Du	30	30	Kt	...	....	.....	J	P	..	4	18	Supplies 200 pupils.
F-1	R. C. Foster.....	.....	Du	22.8	24	Kb	549	19.3	6-13-61	Cf	D	..	25	168	Insufficient supply during dry seasons.
F-2	F. L. Persons....	S. E. Miller.....	D	349	6	Ke, Kt	530	165	1953	Cy	D	..	18	180	Casing: 6-in. to 112 ft.; none below.
G-1	Rex Ennis.....	Howard McClendon..	Du	43.3	30	Ke	405	41.1	10-30-61	J	D	..	2	38	Curbing: 30-in. concrete tile to 43 ft.; none below.
G-2	Sandfort School....	.....	Du	5.9	26	Kb	460	1.4	10-31-61	Cf	P	..	5	15	Supplies 150 to 200 students. Originally a spring.
G-3	G. L. Moore.....	S. E. Miller.....	D	215	6	Ke (?)	515	145.1	9-11-61	T	D,S	..	3	165	
*H-1	Stevens and Taylor Bait Farm.	Virginia Supply and Well Co.	D	712	6	pK	300	90	1961	T	D,P	..	172	1,220	Casing: 6-in. to 297 ft.; none below. Reported yield, 55 gpm in 1961. Supplies cricket and worm farm, and 5 homes.
H-2	Claude Parkman...	-- Prestwood.....	D	275	6	Kt	...	....	.....	Cy	D,S	..	4	93	Casing: 6-in. to 250 ft.; none below.
H-3	C. G. Lee.....	Acme Drilling Co...	D	326	4, 2½	Kt	375	65	1948	Cy	D,S	..	3	49	Casing: 4-in. to 312 ft.; 2½-in. screen from 312 to 322 ft. Supplies home, tenants and dairy. See driller's log.

H-4	G. W. Crouch	S. E. Miller	D	380	4	Ke (?)	...	....	.....	J	D	..	6	57	Casing: 4-in. to 380 ft.; perforated from 105 to 110 ft. Water reported to have high iron content.
H-5	Crouch Dairy.....	....do.....	D	105	4	Ke	...	....	.....	J	S	..	10	54	Water reported to have a high iron content.
H-6	Mrs. Terry Matkins	.....	D	200	4	Kt (?)	...	....	.....	J	D	..	11	258	
H-7	Trimm Estate	.....	D	400	6	Kt	305	29.8	8- 1-61	J	D	..	2	75	
*H-8	A. F. Randall	Virginia Supply and Well Co.	D	729	6	pK	282	1	1961	T	D,S	..	130	264	Casing: 6-in. to 475 ft.; none below. Reported yield, 6 gpm in 1961. Supplies 5 homes and dairy.
H-9	James Jeffries....	Gray Artesian Well Co.	D	300	3	Ke (?)	...	....	.....	Cy	D,S	..	4	71	Casing: 3-in. to 200 ft.; none below.
H-10	Joe B. Mangrum ..	Robertson Drilling Co.	D	140	6	Kb (?)	...	....	.....	J	D	..	3	26	Water reported to have high iron content.
H-11	H. R. Mott	Acme Drilling Co....	D	367	4	Kt (?)	490	200	1961	T	D	..	6	78	Casing: 4-in. to 357 ft.; none below.
H-12	....do.....	Gray Artesian Well Co.	D	376	6	Kt (?)	494	205.2	10-23-61	Cy	N	..	..	...	Casing: 6-in. to 336 ft.; 6-in. screen from 336 to 376 ft.
H-13	Roy E. Cutchin....	Roy E. Cutchin.....	D	78	4	Kb	...	....	.....	Cy	D	..	3	9	Casing: 4-in. to 78 ft.
H-14	J. B. Rudd	....do.....	D	78	2	Kb	...	....	.....	J	D,S	..	1	12	Casing: 2-in. to 78 ft.
*H-15	Bradley Benevolent and Education Assoc.	Gray Artesian Well Co.	D	404	6,4	Kt	355	71.2	10-23-61	T	P	..	4	55	Casing: 6-in. to 175 ft.; 4-in. from 175 to 359 ft.; 4-in. screen from 359 to 404 ft. Reported yield, 25 gpm in 1961. Supplies recreation park and swimming pool. See sample log.
*I-1	Dixie Brick Co....	Robertson Drilling Co.	D	650	6	pK	255	....	.....	T	D	..	53	86	Casing: 6-in. to 450 ft.; none below.
*I-2	....do.....	.....	D	299	6	Kt	256	.8	8- 8-61	J	Ind	..	21	76	Drawdown 4 ft. after ½ hr. pumping 10 gpm on 8-8-61.
I-3	H. L. Posey, Jr...	S. E. Miller	D	265	4	Kt	...	....	.....	Cy	N	..	..	...	Casing: 4-in. to 260 ft.; none below. Water reported to be highly mineralized. Replaced with dug well in 1960.
I-4	Lynn Willis	Robertson Drilling Co.	D	150	6	Ke	450	128.2	8-28-61	Cy	D	..	4	38	Casing: 6-in. to 150 ft.
I-5	I. C. Davis	Gilbert Drilling Co...	D	152	6	Ke	462	129.0	10-31-61	T	D	..	..	...	Casing: 6-in. to 145 ft.; none below. See sample log.
I-6	Fred Carpenter ...	....do.....	D	145	6	Ke	449	112.4	8-23-61	T	D	..	2	155	Casing: 6-in. to 140 ft.; none below; gravel packed from 140 to 145 ft. Drawdown 2 ft. after ½ hr. pumping 5 gpm on 8-23-61.
*I-7	Yuchi Trailer Park.	Tom Smith.....	D	520	4	Kt	428	138.4	9-14-61	T	P	..	5	36	Casing: 4-in. to 500 ft.; 2-in. screen from 500 to 520 ft. Supplies 20 to 30 trailers.

Table 2. --Records of wells--Continued

Well	Owner	Driller	Type	Depth of well (feet)	Diameter of well (inches)	Water-bearing unit	Altitude of land surface (feet)	Water level		Method of lift	Use of water	Field determinations			Remarks
								Above (+) or below land surface (feet)	Date of measurement			Temperature (° F)	Chloride (Cl) (ppm)	Hardness as $CaCO_3$ (ppm)	
L-11	Villula Tea Garden .	W. J. Radford	D	65	4	Kb	332	25.0	11- 7-61	J	D, P	..	..	...	Supplies restaurant and home.
L-12	J. C. Prather	. . . . .	D	280	4	Ke (?)	357	52.5	11- 7-61	J	D, S	..	..	...	Supplies 2 homes.
L-13	E. N. Byrd	W. J. Radford	D	760	3	Kt (?)	325	9.1	11- 7-61	Cf	D	..	..	...	
L-14	. . . . do	. . . . do	D	340	4	Ke (?)	331	26.4	11- 7-61	J	D, P	..	..	...	Supplies motel, cafe, and home.
L-15	. . . . do	. . . . do	D	350	4	Ke (?)	328	20.7	11- 7-61	J	D	..	..	...	Supplies 2 homes.
L-16	Watermelon Creek Roadside Park.	. . . . .	D	150	3	Kb (?)	259	+ 1	12- 7-61	F	D	..	3	103	Estimated discharge, less than 1 gpm on 12-7-61.
L-17	E. W. Richardson. .	. . . . .	D	140	4	Kb	277	+ 4.3	11- 1-61	F	D, S	67	2	122	Casing: 4-in. to 40 ft.; none below. Estimated discharge, 10 gpm on 11-1-61.
M-1	Albert Dudley.	S. E. Miller	D	440	6	Kt	377	82.6	11- 2-61	J	D	..	2	182	Supplies 11 homes. See driller's log.
M-2	A. B. Carroll, Sr. .	. . . . do	D	200	4	Kb (?)	...	....	.....	J	D	..	2	220	Casing: 4-in. to 40 ft.; none below.
M-3	Tom Taylor	W. J. Radford	D	350	6	Ke (?)	380	47.6	11- 2-61	J	D, S	..	6	144	Supplies dog kennel and home.
M-4	Jeff Smith	. . . . do	D	400	4	Ke	...	....	.....	Cy	D	..	3	140	Supplies 2 homes.
M-5	E. E. Johnson, Sr .	. . . . .	D	540	4	Kt	...	....	.....	Cy	D, S	..	4	22	
M-6	. . . . do	Hugh Bert	D	400	4	Ke	347	79.8	8-29-61	N	N	..	..	...	Originally flowed.
M-7	Mrs. H. H. Puryear	Gray Artesian Well Co.	D	391	4	Ke	336	47	1946	Cy	D	..	5	53	Casing: 4-in. to 147 ft.; none below. Reported yield, 7½ gpm in 1946. See sample log.
M-8	F. A. Walker.	. . . . .	D	500	4	Kb, Ke (?)	330	51.4	8-29-61	Cy	D	..	6	72	Casing: 4-in. to 20 ft.; none below.
M-9	W. B. Herndon. . . .	W. J. Radford	D	425	4	Kb, Ke (?)	...	....	.....	Cy	D	..	8	68	Do.
M-10	Ernest Allen	S. E. Miller	D	285	6	Kb, Ke	...	....	.....	J	D	..	18	135	Casing: 6-in. to 30 ft.; none below.

*K-3	G. C. Corcoran . . .	-- Hagler	D	160	4	Ke (?)	233	. . . .	. . . . .	J	P	. .	3	90	Supplies 24 house trailers. Reported to flow when demand is light.
*K-4	. . . . do	Robertson Drilling Co .	D	158	6	Ke	227	. . . .	. . . . .	F, Cf	P	68	3	91	Casing: 6-in. to 100 ft.; none below. Measured discharge, 4.5 gpm on 7-25-61. Supplies trailer park.
K-5	C. A. Howard Estate	-- Hagler	D	210	4	Ke (?)	225	+ 10.6	7-25-61	F, Cf	D	67	2	72	Measured discharge, 3.3 gpm on 7-25-61.
K-6	F. C. Howard	. . . . .	D	225	3	Ke (?)	221	+ 5	1961	F	D	. .	5	77	Estimated discharge, 3 gpm on 7-25-61. Supplies 2 homes and store.
K-7	. . . . do	. . . . .	D	220	3	Ke (?)	224	+ 10	7-25-61	F	D	68	2	72	Measured discharge, 3.7 gpm on 7-25-61.
K-8	Mrs. Sarah Davis . .	. . . . .	D	375	4	Ke (?)	. . .	. . . .	. . . . .	Cy	P	. .	3	88	Supplies trailer park and home.
K-9	J. J. Corbett	. . . . .	D	700	4	Kt	. . .	. . . .	. . . . .	Cy	D, S	. .	4	54	
K-10	H. B. Modling	S. E. Miller	D	124	6	Kb	320	54	1961	J	D	. .	2	5	Water filtered to remove iron.
K-11	Oswichee Baptist Church.	-- Barabee	D	400	3	Ke (?)	318	. . . .	. . . . .	Cy	D	. .	11	60	Casing: 3-in. to 200 ft.; none below. Supplies 3 homes and church.
K-12	Crossroads School .	. . . . .	Du	21.3	30	Qt	303	16.8	10-30-61	M	P	67	5	1	Curbing: none to 16 ft.; 30-in. wood curb from 16 to 20 ft. Supplies 50 students.
L-1	H. M. Barrow	H. W. Peerson Drilling Supply Co.	D	350	4	Kt	348	51.4	10-24-61	J	D	. .	4	24	
L-2	Jack Keys	Robertson Drilling Co .	D	76	6	Kb (?)	321	23.4	10-24-61	J	D	. .	2	25	Casing: 6-in. to 75 ft.; none below.
L-3	Bradley Benevolent and Education Assoc.	S. E. Miller	D	225	6	Ke (?)	. . .	. . . .	. . . . .	Cy	D	. .	4	64	
L-4	Alta Vista Motel . . .	-- McKissick	Du	90	30	Kb	. . .	. . . .	. . . . .	J	P	. .	2	23	
*L-5	Chavala School	Gray Artesian Well Co.	D	348	4	Ke	360	37	1946	J	P	70	2	148	Casing: 4-in. to 123 ft.; none below. Reported yield, 7 gpm in 1946. Supplies 330 students. See sample log.
*L-6	Paul and Joe Matthews.	. . . . .	D	210	6	Ke	. . .	. . . .	. . . . .	Cy	P	. .	. .	. . .	Casing: 6-in. to 100 ft.; none below. Supplies town of Seale.
L-7	. . . . do	Paul Matthews	D	140	2	Ke	. . .	14	1961	Cf	P, D	. .	. .	. . .	Casing: 2-in. to 80 ft.; none below. Reported yield, 5 gpm in 1961. Supplemental supply for town of Seale.
*L-8	Oliver High School .	. . . . .	D	145	4	Kb (?)	. . .	. . . .	. . . . .	J	P	. .	3	27	Supplies 400 students.
L-9	Relfe Pruett.	W. J. Radford	D	175	4	Kb	. . .	. . . .	. . . . .	Cy	D	. .	. .	. . .	Casing: 4-in. to 88 ft.; none below.
L-10	R. W. Jones	S. E. Miller	D	200	6	Kb (?)	. . .	. . . .	. . . . .	J	D, S	. .	36	210	Water treated for hardness and iron content.

Table 2.--Records of wells--Continued

Well	Owner	Driller	Type	Depth of well (feet)	Diameter of well (inches)	Water-bearing unit	Altitude of land surface (feet)	Water level		Method of lift	Use of water	Field determinations			Remarks
								Above (+) or below land surface (feet)	Date of measurement			Temperature (° F)	Chloride (Cl) (ppm)	Hardness as $CaCO_3$ (ppm)	
I-8	O. E. Blakeley....	Robertson Drilling Co.	D	252	6	Kt	406	130.9	9-14-61	T	D, P	..	1	60	Casing: 6-in. to 245 ft.; none below. Supplies home and cafe.
I-9	Lynn Willis.....	S. E. Miller.....	D	238	4	Kt	454	140.6	8-28-61	N	N, O	..	..	...	Casing: 4-in. to 175 ft.; none below. Reportedly abandoned because of high iron content. Water-level fluctuations shown on fig. 9.
I-10	W. H. Carden....	....do.....	D	350	4	Kt	...	....	.....	Cy	D	..	4	80	Water reported to be highly mineralized.
*I-11	Bickerstaff Brothers	-- Clay.....	D	363	4	Kt	232	....	.....	Cy	Ind	..	7	62	Casing: 4-in. to 300 ft.; none below. Reported to flow when not pumped. Supplied brick plant.
I-12	....do.....	Clay and Hoover.....	D	288	4	Kt	...	....	.....	J	D	..	3	10	
I-13	....do.....	.....	D	150	4	Kt (?)	200	+ 3.5	8- 8-61	F	D	66	4	48	Measured discharge, 1 gpm on 8-8-61.
I-14	....do.....	S. E. Miller.....	D	210	4	Kt	221	....	.....	Cf	D	..	10	42	Casing: 4-in. to 200 ft.; none below. Reported to flow when not pumped.
I-15	....do.....	....do.....	D	220	4	Kt	210	+ 1	8- 8-61	F	D	69	5	72	Casing: 4-in. to 200 ft.; none below. Estimated discharge, less than 1 gpm on 8-8-61.
J-1	Fort Benning Military Reservation.	Layne-Atlantic Co....	D	...	10	Kt (?)	280	62.6	7-19-61	N	N	..	..	...	Known as well 3, Alabama area.
J-2	....do.....	.....	D	200	4	Kt	220	+ 5	7-19-61	F	D	69	1	34	Measured discharge, 7.1 gpm on 7-19-61.
Fort Benning Military Reservation 9	....do.....	Layne-Atlantic Co....	D	568	12, 10	Kt	255	4.6	5-11-50	N	N, O	..	..	...	Casing: 12-in. to 215 ft.; 10-in. screen from 215 to 220, 230 to 235, 280 to 290, and 540 to 550 ft. with 10-in. casing between screens. Hole filled with gravel from 550 to 568 ft. Reported yield, 120 gpm in 1942. Used as observation well from 1950 to 1961. Water-level fluctuations shown on fig. 10. See driller's log.
K-1	Bradley Estate....	.....	D	400	8 (?)	Kt (?)	...	....	.....	Cy	D	..	..	...	Supplies 3 homes.
K-2	Mrs. J. H. Kite...	J. L. Kite.....	D	100	6	Kb	...	....	.....	Cy	D	..	..	...	Water reported to have high iron content.

M-11	Mrs. Annie Carden.	-- Thompson	D	385	3	Kb, Ke (?)	...	....	.....	Cy	D	..	7	42	Casing: 3-in. to 50 ft.; none below.
M-12	F. R. Williams ...	W. J. Radford	D	380	4	Kb, Ke (?)	...	....	.....	Cy	D,S	..	4	28	Casing: 4-in. to 50 ft.; none below. Supplies 2 homes.
N-1	A. B. Carroll, Sr..	S. E. Miller	D	300	6	Kb, Ke	365	59.8	7-10-61	T	D,S	..	53	58	Casing: 6-in. to 40 ft.; none below. Supplies 2 homes.
N-2	.... do	Acme Drilling Co	D	415	6,4	Kt	337	75	1950	T	D	..	7	79	Casing: 6-in. to 383 ft.; 4-in. from 374 to 385 ft.; 4-in. screen from 385 to 415 ft. Reported drawdown 225 ft. after pumping 8 hrs. at 45 gpm in 1950. Used for swimming pool and auxiliary supply. See sample and driller's logs.
N-3	B. W. Groce	W. J. Radford	D	300	4	Ke	...	....	.....	Cy	D	..	5	36	
N-4	I. F. Ellison	.... do	D	463	2	Kb, Ke, Kt (?)	...	....	.....	Cy	S	..	46	102	Casing: 2-in. to 42 ft.; none below.
N-5	.... do	S. E. Miller	D	423	6	Kb, Ke (?)	...	3	1952	Cy	S	..	11	168	Casing: 6-in. to 66 ft.; none below.
N-6	Frank Carroll	Ballard Drilling Co.	D	475	6,4	Ke, Kt (?)	400	67.2	9-28-61	T	D	68	42	297	Casing: 6- and 4-in. to 475 ft. Drawdown 71.2 ft. after pumping ½ hr. at 15 gpm on 9-28-61. Water reported to have high iron content. See sample log.
N-7	.... do	.... do	D	120	5	Kb	400	67.6	2- 7-62	Cy	D	..	22	479	Reported yield, 2 gpm in 1962.
N-8	W. H. Dozier.	O. B. Radford	D	200	4	Kb (?)	...	....	.....	J	D	..	16	364	Water reported to have high iron content.
O-1	I. F. Ellison	Ballard Drilling Co.	D	110	6	Kb	...	27	1960	J	D,S	..	11	248	Casing: 6-in. to 42 ft.; none below. Water is treated for hardness and iron content.
*O-2	City of Hurtsboro ..	Layne-Central Co.	D	496	8,4	Ke	341	99.6	3- 7-62	T	P	..	14	176	Casing: 8-in. to 318 ft.; 4-in. casing and screen from 318 to 496 ft. Screen is gravel walled. Reported drawdown 18 ft. after pumping 8(?) hrs. at 70 gpm.
O-3	.... do	.... do	D	496	10,6	Ke	346	111.0	3- 7-62	T	P	71	31	156	Casing: 10-in. to 440 ft.; 6-in. from 390 to 445 ft.; 6-in. screen from 445 to 460 ft., and from 487 to 492 ft. Screen is gravel walled. Drawdown 166.5 ft. after pumping 10 hrs. at 94 gpm on 3-7-62. See driller's log for test well drilled to 520 ft.
O-4	Mrs. S. B. Williams	W. J. Radford	D	238	6	Kb	382	29.8	5-17-61	J	S	..	..	...	Estimated yield, 10 gpm on 5-17-61.
O-5	A. B. Carroll Lumber Co.	.... do	D	150	6	Kb (?)	372	38.6	11- 1-61	J	Ind	..	7	195	

Table 2. --Records of wells--Continued

Well	Owner	Driller	Type	Depth of well (feet)	Diameter of well (inches)	Water-bearing unit	Water level: Altitude of land surface (feet)	Water level: Above (+) or below land surface (feet)	Water level: Date of measurement	Method of lift	Use of water	Field determinations: Temperature (° F)	Field determinations: Chloride (Cl) (ppm)	Field determinations: Hardness as $CaCO_3$ (ppm)	Remarks
O-6	City of Hurtsboro . .	Layne-Central Co. . . .	D	1,105	10,6	. .	345	. . . .	. . . . .	N	N	. .	. .	. . .	Test hole for municipal supply. See sample and driller's logs.
O-7	J. T. Hughes	Ballard Drilling Co. . .	D	105	6	Kb	368	23.0	7-25-61	J	D	. .	10	142	
O-8	A. E. Williams . . .	O. B. Radford	D	120	4	Kb	. . .	. . . .	. . . . .	J	D,S	. .	9	168	Casing: 4-in. to 100 ft.; none below.
P-1	Price M. Stone. . . .	W. J. Radford	D	141	4	Kb	. . .	. . . .	. . . . .	J	D,S	. .	44	154	
Q-1	Will Dozier	. . . . .	D	150	4	Kb	344	41.7	11-21-61	J	S	. .	42	322	
Q-2	. . . . do	. . . . .	D	150	4	Kb	. . .	. . . .	. . . . .	J	D	. .	. .	. . .	Not used in 1961.
Q-3	W. H. Chatfield . . .	. . . . .	D	184	4	Kb	. . .	. . . .	. . . . .	Cy	D,S	. .	27	240	Supplies 3 homes.
Q-4	M. M. Mathis	. . . . .	D	150	5	Kb	284	18.1	11-21-61	M	D	. .	19	188	
Q-5	Leroy Upshaw	. . . . .	D	150	5	Kb	275	12.8	11-21-61	Cf	D	. .	19	198	Supplies several families.
Q-6	. . . . do	. . . . .	D	150	5	Kb	273	9.2	11-21-61	J	D	. .	20	194	Supplies 2 homes.
Q-7	Son Peterson	. . . . .	D	400	6	Ke (?)	272	3.9	11-21-61	T	D	. .	6	24	
R-1	Antioch School	. . . . .	Du	30	30	Kb	370	4.1	1-16-62	J	P	. .	2	58	Supplies 63 students.
R-2	A. B. Carroll, Sr. .	S. E. Miller	D	296	6	Kb	. . .	. . . .	. . . . .	Cy	D	. .	. .	. . .	Casing: 6-in. to 100 ft.; none below. Well caved below casing.
R-3	. . . . do	W. J. Radford	D	500	4	Kb (?)	. . .	. . . .	. . . . .	M	N	. .	. .	. . .	Well reportedly abandoned because of insufficient supply.
S-1	Clem Howard	. . . . do	D	180	4	Kb	262	+ 8	11- 2-61	Cf, F	D	68	5	115	Casing: 4-in. to 50 ft.; none below. Supplies 2 homes.
S-2	A. D. Woodall	O. B. Radford	D	180	3	Kb	275	7.5	11- 2-61	F	D	68	3	120	Casing: 3-in. to 40 ft.; none below.
S-3	Nouvse and Lowery.	W. J. Radford	D	200	4	Kb	275	+ 1	1961	F	D,S	68	3	114	Estimated discharge 15 gpm on 11-1-61.
S-4	. . . . do	. . . . do	D	150	3	Kb	264	+ 2	1961	F	D,S	68	20	10	Casing: 3-in. to 40 ft.; none below.
S-5	Pittsview School . . .	. . . . .	D	200	4	Kb	. . .	. . . .	. . . . .	Cy	N	. .	. .	. . .	Used for supply until school closed in 1958.
S-6	J. E. Lowery.	W. J. Radford	D	285	4	Kb	245	33.6	12- 7-61	Cy	D	. .	80	94	Casing: 4-in. to 80 ft.; none below.
*S-7	W. M. Burt	J. W. Caldwell.	D	445	3	Kb (?)	. . .	. . . .	. . . . .	Cy	D	72	71	46	Casing: 3-in. to 26 ft.; none below. Originally flowed.

S-8	B. B. Burt	W. J. Radford	D	185	4	Kb	...	....	.....	Cy	D	..	80	66	Supplies 2 homes. Originally flowed.
S-9	B. I. Burt.....	E. L. Burt	D	185	4	Kb	...	....	.....	M	D	..	..	...	Originally flowed.
S-10	Mrs. Marie Forbes.	W. J. Radford	D	80	4	Kb	...	....	.....	Cy	D	..	65	104	
*S-11	Forbes Dairy.....	H. W. Peerson Drilling Supply Co.	D	760	4	Kt	224	+ 9	12- -61	F, Cf	D,S	72	4	5	Casing: 4-in. to 700 ft.; none below. Reported discharge 16 gpm in 1961. Supplies 2 homes and dairy.
S-12	H. C. Newsome...	W. J. Radford	D	530	4	Kb, Ke	226	+ 10	12- -61	F,J	D,S	67	50	23	Casing: 4-in. to 22 ft.; none below. Estimated discharge less than 1 gpm on 12-7-61.
S-13	Saint James Junior High School.	.....	Du	14.1	24	Kb	248	10.0	12- 7-61	M	P	..	..	...	Curbing: 24-in. concrete tile to 14 ft. Supplies 100 students.
S-14	Mrs. Davis Reaves.	.....	D	190	3	Kb	228	2.6	11-28-61	J	D	..	..	...	House unoccupied in 1961.
S-15	H. O. Dyess	S. E. Miller	D	380	6	Kb (?)	225	53.3	11-28-61	J	D,S	..	63	75	Casing: 6-in. to 60 ft.; none below. Supplies 6 homes.
*T-1	Saint Josephs Missionary Cenacle.	Layne-Central Co....	D	360	12,6	Kb	374	135.8	3-22-62	T	P	..	2	43	Casing: 12-in. to 302 ft.; 6-in. from 260 to 320 ft.; 6-in. screen from 320 to 360 ft. Reported yield 150 gpm in 1949. Test hole to 711 ft. See sample and driller's logs.
*T-2	....do.....	W. J. Radford	D	460	4½	Kb, Ke (?)	...	....	.....	N	N	..	..	...	Casing: 4½-in. to 60 ft.; none below. Well abandoned. Originally flowed.
*T-3	....do.....	.....	D	900	6	Kt	...	....	.....	N	N	67	..	...	Casing: 6-in. to 790 ft.; none below.
T-4	....do.....	.....	D	600	4	Ke (?)	...	....	.....	J	D	..	11	154	
T-5	....do.....	.....	D	400	2	Ke (?)	205	+ 2	6- -61	F	N	68	4	136	Estimated discharge 10 gpm on 6-6-61.
T-6	Bradley Estate....	H. W. Peerson Drilling Supply Co.	D	1,400	4	Kt (?)	...	....	.....	Cy	D,S	..	6	4	
U-1	McLendon Plantation.	Hugh Burt	D	625	3	Kt	220	+ 2.5	10-30-61	F	D	70	2	26	Supplies 2 homes.
U-2	....do.....	.....	D	465	4	Kt	210	+ 10	11- -61	F	D,S	70	1	24	Casing: 4-in. to 450 ft.; none below. Supplies 2 homes.
V-1	Bradley Estate....	.....	D	300	3	Kb (?)	196	+ 1	11- -61	F	S	68	77	83	Casing: 3-in. to 40 ft.; none below. Estimated discharge 5 gpm on 11-28-61.
V-2	E. S. Kite.....	W. J. Radford	D	460	4½	Kb, Ke (?)	...	....	.....	Cf	N	..	..	...	Casing: 4½-in. to 60 ft.; none below.
W-1	Cottonton School...	H. W. Peerson Drilling Supply Co.	D	290	4	Kb	226	8.4	11-28-61	J	D	..	51	27	Casing: 4-in. to 280 ft.; screen from 280 to 290 ft. Used for home supply in 1961.

Table 2. --Records of wells--Continued

Well	Owner	Driller	Type	Depth of well (feet)	Diameter of well (inches)	Water-bearing unit	Altitude of land surface (feet)	Water level		Method of lift	Use of water	Field determinations			Remarks
								Above (+) or below land surface (feet)	Date of measurement			Temperature (° F)	Chloride (Cl) (ppm)	Hardness as $CaCO_3$ (ppm)	
W-2	Mrs. Willis Thompson	Robertson Drilling Co.	D	300	6	Kb	...	158.3	1- 8-62	J	D,S	..	..	...	
*W-3	Richard Comer.....	H. W. Peerson Drilling Supply Co.	D	938	4, 2½	Ke	428	160	1- -62	T	D,S	71	4	8	Casing: 4-in. to 500 ft.; 2½-in. from 500 to 920 ft.; 2½-in. screen from 920 to 926 ft. and from 930 to 938 ft. Reported yield 20 gpm in 1962. See sample log.
W-4	L. A. Claitt.....	Watson Drilling Co...	D	676	4	Kb (?)	300	61.4	2- 5-62	N	N	..	..	...	Casing: 4-in. to 294 ft.; none below. Well caved below casing. See driller's log.
W-5	....do.....	W. J. Radford.....	D	750	4	Ke (?)	...	....	.....	Cy	N	..	..	...	
X-1	A. B. Carroll, Sr...	.....	D	164	3	Kb	...	....	.....	Cf	D,S	67	76	106	Casing: 3-in. to 22 ft.; none below. Reportedly flowed 100 gpm in 1905. Supplies several tenant houses.
X-2	Richard Comer.....	H. W. Peerson Drilling Supply Co.	D	925	4, 2½	Kt	293	4.2	8- 6-62	J	S	..	..	...	Casing: 4-in. and 2½-in. to 900 ft.; none below.
*X-3	Miss Corrine Faris..	W. J. Radford.....	D	80	4	Krc	475	40	1- -62	Cy	D	..	10	17	
X-4	Richard Comer.....	H. W. Peerson Drilling Supply Co.	D	928	4, 2½	Ke (?)	445	187.9	1- 8-62	T	D,S	..	..	...	Casing: 4-in. to 500 ft.; 2½-in. from 500 to 900 ft.; 2½-in. screen from 900 to 928 ft.

Table 3. --Chemical analyses of water from selected wells

[Values reported for dissolved solids are calculated from determined constituents]

Water-bearing unit: pK, pre-Cretaceous rocks; Kt, Tuscaloosa Group; Ke, Eutaw Formation; Kb, Blufftown Formation; Krc, Cusseta Sand Member of Ripley Formation.

Well	Date of collection	Water-bearing unit	Temperature (° F)	Silica (SiO_2)	Iron (Fe)	Manganese (Mn)	Calcium (Ca)	Magnesium (Mg)	Sodium (Na)	Potassium (K)	Bicarbonate (HCO_3)	Sulfate (SO_4)	Chloride (Cl)	Fluoride (F)	Nitrate (NO_3)	Phosphate (PO_4)	Boron (B)	Dissolved solids	Hardness as $CaCO_3$: Calcium, magnesium	Hardness as $CaCO_3$: Noncarbonate	Percent Sodium	Specific conductance (micromhos at 25° C)	pH
				Parts per million																			
A-4	5- 9-62	pK	..	32	0.13	0.00	58	2.8	21	3.5	120	99	7.7	0.5	0.0	0.00	0.00	284	156	58	22	412	7.4
C-3	5- 9-62	Kt	69	5.5	.07	...	.9	.4	1.8	.5	6	.6	1.3	.0	1.5	...	...	16	4	0	47	41	6.5
C-4	5- 9-62	pK	69	...	.71	...	7.1	1.8	6.7	4.7	55	.8	.3	.1	.3	...	...	...	25	0	32	98	7.1
H-1	5- 9-62	pK	71	11	1.9	...	475	11	239	3.1	13	1,410	215	1.1	.0	...	...	2,370	1,230	1,220	30	2,880	6.4
H-8	6- 5-62	pK	71	10	.10	.10	122	.7	138	2.0	6	429	122	1.4	.0	.00	.16	828	308	302	49	1,190	7.1
H-15	5- 8-61	Kt	..	17	...	...	22	.7	14	5.0	105	1.6	3.0	.4	.0	...	...	114	58	0	32	184	7.5
I-1	5- 9-62	pK	..	20	.40	.20	34	1.0	56	4.3	86	39	79	.3	.0	.00	.00	276	90	19	56	449	7.0
I-2	11-14-40	Kt	..	...	...	...	...	...	...	...	92	36	26	.0	...	...	...	....	84	9	..	....	...
I-7	5- 9-62	Kt	72	49	1.6	.20	13	.6	8.0	3.4	66	.0	3.1	.1	.0	.00	.00	110	35	0	31	120	6.9
I-11	11-14-40	Kt	..	...	...	...	...	...	...	...	98	36	12	.0	...	...	...	....	74	0	..	....	...
K-3	1-31-41	Ke (?)	..	...	...	...	...	...	...	...	129	12	2.0	.2	...	...	...	....	86	0	..	....	...
K-4	5- 9-62	Ke	68	16	.13	...	33	2.3	12	5.2	128	14	2.8	.1	.0	...	...	148	92	0	21	236	7.5
L-5	5- 8-61	Ke	70	25	...	...	51	5.1	6.2	11	198	6.8	2.0	.3	.0	...	...	....	148	0	8	326	7.8
L-6	5-10-62	Ke	68	24	1.1	...	40	10	6.4	8.6	197	5.6	1.1	.1	.0	...	...	194	143	0	8	322	7.4
L-8	5-10-62	Kb (?)	68	20	1.2	...	7.0	1.1	4.1	2.7	22	12	2.9	.0	.0	...	...	62	22	4	26	78	6.5
O-2	5- 8-61	Ke	73	19	...	...	69	1.0	30	4.7	174	81	14	.2	.0	...	...	303	176	34	26	483	7.5
S-7	11-14-40	Kb (?)	72	..	...	...	...	...	...	...	99	5.0	49	1.2	...	...	...	....	21	0	..	....	...
S-11	5- 3-62	Kt	73	12	.06	.00	1.0	.0	46	.9	114	5.0	3.8	.2	.0	.00	.00	125	2	0	97	191	7.4
T-1	5- 3-62	Kb	68	44	...	.00	16	.2	9.0	3.1	61	8.4	2.3	.3	.0	.42	.00	113	35	0	31	127	6.8
T-2	1-31-41	Kb, Ke (?)	..	...	...	...	...	...	...	...	95	8.0	3.0	.3	...	...	...	....	69	0	..	....	...
T-3	1-31-41	Kt	67	...	...	...	...	...	...	...	71	7.0	2.0	.6	...	...	...	....	51	0	..	....	...
W-3	6- 5-62	Ke	71	20	.13	...	2.0	.2	53	1.0	130	5.0	7.4	.1	...	...	...	153	6	0	94	223	7.8
W-3	8- 8-62	Ke	71	9.8	...	.00	1.1	.3	46	.9	125	.0	4.0	.1	.5	.00	.11	143	4	0	95	213	7.7
X-3	11-14-40	Krc	..	...	...	...	...	...	...	...	7	1.0	15	.0	20	...	...	....	21	15	..	....	...

Table 4.—*Sample logs of wells*

	Thickness (feet)	Depth (feet)
Well H-15		
Owner: Bradley Benevolent and Educational Assoc. Driller: Gray Artesian Well Co.		
Blufftown Formation		
Sand, yellowish-orange, medium-grained, angular to subangular, silty, ferruginous	15	15
Clay, reddish-brown, sandy, micaceous; yellowish-orange subrounded to rounded granules and pebbles; dark-gray sandy slightly micaceous clay	10	25
Sand, light-gray to white, medium- to coarse-grained, subangular, slightly silty	10	35
Clay, olive-gray, slightly sandy, micaceous, lignitic	10	45
Clay, olive-gray, sandy, abundantly lignitic, slightly micaceous	10	55
Sand, very light gray, fine-grained, subangular, slightly silty, micaceous, glauconitic	10	65
Sand, very light gray, fine- to medium-grained, subangular, silty	10	75
Eutaw Formation		
Clay, light olive-gray, sandy, calcareous, lignitic, fossiliferous	10	85
Limestone, light olive-gray, sandy, abundantly fossiliferous	20	105
Clay, light olive-gray, sandy, fossiliferous	10	115
Clay, light olive-gray, calcareous	10	125
Clay, light olive-gray, calcareous, sandy, fossiliferous	40	165
Clay, olive-gray, very sandy, fossiliferous	22	187
Sand, yellowish-gray, medium to very coarse grained, angular to subangular, clayey, fossiliferous	10	197
Sandstone, light-gray, calcareous, abundantly fossiliferous	10	207
Sand, light olive-gray, medium to very coarse grained, silty, clayey	10	217
Clay, olive-gray, calcareous, sandy, fossiliferous	10	227
Sand, light-gray, coarse to very coarse grained, subangular; olive-gray sandy clay	10	237
Tuscaloosa Group		
Sand, yellowish-orange to reddish-brown, coarse to very coarse grained, subangular, silty; reddish-brown and olive-gray sandy clay	2	239
Sand, yellowish-orange, very coarse grained to granule, subangular, silty	7	246

Table 4.—*Sample logs of wells*—Continued

	Thickness (feet)	Depth (feet)
Well H-15—Continued		
Tuscaloosa Group—Continued		
Sand, very pale orange, coarse to very coarse grained, subangular	10	256
Sand, dark yellowish-orange, coarse to very coarse grained with granules, subangular, silty, ferruginous	10	266
Sand, very pale orange, coarse to very coarse grained with granules, subangular, slightly silty	7	273
Granules and pebbles, yellowish-orange, subangular, silty, ferruginous; yellowish-gray calcareous sandstone; light-gray silty clay; reddish-brown sandy clay; contains numerous fragments of macrofossils	7	280
Sand, yellowish-gray, coarse to very coarse grained, subangular, silty, fossiliferous	15	295
Sand, yellowish-gray, very coarse grained with granules, subangular, silty, fossiliferous; olive-gray silty clay	20	315
Sand, pale orange-pink, medium- to coarse-grained, angular to subangular, silty, ferruginous	5	320
Sand, yellowish-orange, coarse to very coarse grained with granules, subangular, ferruginous; pale red-purple sandy silty clay	5	325
Sand, pale yellowish-orange, very coarse grained with granules, subangular, silty	10	335
Granules, very pale orange, sandy, subangular, with weathered feldspar pebbles	10	345
No record	3	348
Granules and pebbles, very pale orange, subangular to subrounded, silty; pale-purple, moderate reddish-brown, and dark-gray silty clay	10	358
Sand, pale yellowish-orange, very coarse grained with granules and pebbles, subangular, silty, ferruginous; varicolored sandy clay	20	378
Pebbles and granules, pale yellowish-orange, subangular to subrounded, silty; varicolored and gray silty clay	10	388
Sand, pale yellowish-orange, coarse-grained to granule, subangular; varicolored silty clay	11	399
No record	5	404

Table 4.—*Sample logs of wells*—Continued

	Thickness (feet)	Depth (feet)
Well I-5		
Owner: I. C. Davis		
Driller: Gilbert Drilling Co.		
Blufftown Formation(?)		
Clay, light-brown, sandy, micaceous	10	10
Clay, pale yellowish-brown, sandy, sparsely micaceous	10	20
Eutaw Formation		
Clay, light olive-gray, noncalcareous, sparsely micaceous	20	40
Clay, medium dark-gray, sandy, pyritic, micaceous, fossiliferous	10	50
Clay, olive-gray, sandy, sparsely micaceous	10	60
Clay, olive-gray, sandy, sparsely micaceous, pyritic, and lignitic	20	80
Clay, olive-gray, sandy, slightly calcareous, micaceous, pyritic, lignitic, fossiliferous	10	90
Sandstone, light olive-gray, fossiliferous; olive-gray micaceous pyritic lignitic sandy clay; with common shell fragments	10	100
Clay, olive-gray, calcareous, sandy, sparsely micaceous, fossiliferous	10	110
Sand, medium light-gray, medium to very coarse grained, angular to subangular, clayey, slightly calcareous, pyritic, lignitic, micaceous, fossiliferous	10	120
Clay, medium light-gray, sandy, slightly calcareous, micaceous, pyritic	10	130
Sand, yellowish-gray, medium to very coarse grained, subangular, clayey, pyritic	10	140
Sand, grayish-orange, coarse to very coarse grained with granules, subangular, slightly pyritic and ferruginous	10	150
No record	2	152
Well L-5		
Owner: Chavalla School		
Driller: Gray Artesian Well Co.		
Blufftown Formation		
Sand, very pale orange, coarse to very coarse grained with granules and pebbles, subangular to subrounded; moderate-brown limonitic sandstone and small limonite geodes	20	20
No record	10	30

Table 4.—*Sample logs of wells*—Continued

	Thickness (feet)	Depth (feet)
Well L-5—Continued		
Blufftown Formation—Continued		
Sand, very pale orange, coarse to very coarse grained with granules, subangular to subrounded; moderate-brown limonitic sandstone	10	40
Sand, pale yellowish-orange, coarse to very coarse grained with granules, subangular to subrounded; moderate yellowish-brown limonitic sandstone with small limonite geodes	10	50
Sand, pale yellowish-orange, very coarse grained with granules and pebbles, subangular to subrounded; light-brown limonitic sandstone	35	85
No record	5	90
Eutaw Formation		
Clay, dark-gray, sandy, noncalcareous, lignitic, phosphatic(?); very light gray to white medium- to coarse-grained angular to subangular sand	6	96
Clay, olive-gray, sandy, noncalcareous, lignitic, micaceous	14	110
Clay, medium-gray, sandy, calcareous, lignitic, micaceous; very light gray calcareous micaceous sandstone; rare fossil fragments in sample	10	120
Sandstone, light-gray, calcareous, fossiliferous; medium-gray noncalcareous clay; abundant shell fragments	25	145
No record	20	165
Limestone, medium light-gray, sandy, fossiliferous	20	185
Clay, medium-gray, noncalcareous, fossiliferous	10	195
Clay, medium-gray, fissile, fossiliferous; light-gray calcareous fossiliferous sandstone	20	215
Clay, medium light-gray, noncalcareous; rare light-gray sandstone	30	245
Clay, medium-gray, calcareous, sandy, micaceous, fossiliferous; light-gray to white calcareous sandstone; rare gray noncalcareous clay and sandstone	20	265
Sandstone, medium light-gray, calcareous, micaceous; greenish-gray calcareous micaceous fossiliferous sandy clay; common fossil fragments	20	285
Sandstone, light-gray, calcareous, fossiliferous; pinkish-gray fine- to coarse-grained angular to subangular sand	10	295
Sandstone, light olive-gray, calcareous, pyritic, fossiliferous; medium-gray noncalcareous sandy clay; light-gray micaceous limestone	20	315

Table 4.—*Sample logs of wells*—Continued

	Thickness (feet)	Depth (feet)
Well L-5—Continued		
Eutaw Formation—Continued		
Clay, medium dark-gray, calcareous, sandy, micaceous; light olive-gray fossiliferous siltstone; pinkish-gray calcareous sandstone	10	325
Sand, yellowish-gray, coarse to very coarse grained, subangular; pinkish-gray calcareous lignitic micaceous sandstone	10	335
Sand, very pale orange, coarse to very coarse grained, subangular	5	340
Tuscaloosa Group		
Clay, moderate yellowish-brown, mottled, sandy	8	348
Well M-7		
Owner: Mrs. H. H. Puryear Driller: Gray Artesian Well Co.		
Blufftown Formation		
Sand, pale yellowish-orange, medium to very coarse grained, angular to subangular, ferruginous; pale yellowish-brown calcareous sandstone	12	12
Clay, medium-gray, sandy, calcareous, fossiliferous; common microfossils	5	17
No record	60	77
Eutaw Formation		
Sandstone, light-gray, calcareous, sparsely glauconitic, fossiliferous; medium-gray coarsely sandy micaceous fossiliferous clay; abundant shell fragments and subrounded granules	20	97
Clay, medium-gray, sandy, calcareous, micaceous, fossiliferous; light-gray calcareous sandstone; abundant fossil fragments and subrounded granules	29	126
Shale, medium-gray to light olive-gray, sandy, with granules, fossiliferous; greenish-gray to olive-gray micaceous sandy clay	60	186
Sandstone, light olive-gray, calcareous, fossiliferous; shell fragments compose about 90 percent of sample	30	216
Shale, light olive-gray, sandy, calcareous, fossiliferous; light olive-gray clay	10	226
No record	10	236

Table 4.—*Sample logs of wells*—Continued

	Thickness (feet)	Depth (feet)
Well M-7—Continued		
Eutaw Formation—Continued		
Clay, greenish-gray, calcareous, sparsely micaceous, fossiliferous	20	256
No record	10	266
Clay, greenish-gray, calcareous, silty, sparsely micaceous, fossiliferous	32	298
Sandstone, yellowish-gray, calcareous; light olive-gray fossiliferous sandy limestone; pale yellowish-orange coarse-grained to granule angular to subrounded sand.	21	319
Clay, medium-gray, sandy, calcareous; light olive-gray fossiliferous sandy siltstone	30	349
No record	12	361
Sand, very pale orange, coarse to very coarse grained, subangular; light-gray calcareous sandstone	20	381
Sand, very pale orange, very coarse grained with granules, subangular to subrounded; shell fragments in sample	10	391
Well N-2		
Owner: A. B. Carroll, Sr. Driller: Acme Drilling Co.		
Blufftown Formation		
Sand, pale yellowish-brown, fine- to medium-grained, angular, silty, micaceous, ferruginous	21	21
Clay, medium-gray, calcareous, sandy; numerous microfossils and shell fragments; light-gray calcareous sandstone	21	42
Sand, medium light-gray, fine-grained, angular, silty, calcareous, sparsely glauconitic, fossiliferous	42	84
Sand, yellowish-gray, very fine to fine-grained, angular, silty, calcareous, slightly ferruginous, fossiliferous	21	105
Eutaw(?) Formation		
Clay, light olive-gray, calcareous, sandy, fossiliferous	21	126
Clay, medium-gray, calcareous, sandy, abundantly fossiliferous with microfossils and shell fragments	21	147
Sand, medium-gray, very fine to fine-grained, angular, calcareous, silty, lignitic, fossiliferous	21	168
Sandstone, medium light-gray, calcareous, fossiliferous with shell fragments composing about 50 percent of sample	21	189

Table 4.—*Sample logs of wells*—Continued

	Thickness (feet)	Depth (feet)
Well N-2—Continued		
Eutaw(?) Formation—Continued		
Shell fragments, light-gray, mostly *Ostrea* sp.; olive-gray clay	63	252
Clay, light olive-gray, calcareous, silty, sparsely fossiliferous	21	273
Clay, light olive-gray, calcareous, fossiliferous	21	294
Clay, medium-gray, calcareous, sandy, fossiliferous; light-gray to white calcareous sandstone	64	358
Clay, yellowish-gray to pale reddish-brown, sandy, calcareous, pyritic, fossiliferous; very pale orange coarse to very coarse grained subangular sand	21	379
Sand, very pale orange, coarse to very coarse grained, subangular; varicolored clay	21	400
Tuscaloosa Group		
Clay, varicolored, sandy, micaceous; very pale orange coarse to very coarse grained angular to subangular sand	15	415
Well N-6		
Owner: Frank Carroll Driller: Ballard Drilling Co.		
No record	265	265
Eutaw Formation		
Limestone, light-gray, sandy, pyritic, abundantly fossiliferous	15	280
Limestone, light- to medium-gray, slightly sandy, abundantly fossiliferous	10	290
Limestone, light-gray, slightly sandy, abundantly fossiliferous; light olive-gray slightly calcareous micaceous shale	5	295
Limestone, light- to medium-gray, slightly sandy, abundantly fossiliferous	20	315
Limestone, light- to medium-gray, abundantly fossiliferous; light olive-gray slightly calcareous shale	5	320
Limestone, light olive-gray, abundantly fossiliferous	10	330
Limestone, light olive-gray, abundantly fossiliferous; medium-gray micaceous lignitic slightly calcareous clay	5	335
Clay, medium light-gray, calcareous, slightly sandy, micaceous, lignitic, fossiliferous; light olive-gray abundantly fossiliferous limestone	5	340

Table 4.—*Sample logs of wells*—Continued

	Thickness (feet)	Depth (feet)
Well N-6—Continued		
Eutaw Formation—Continued		
Limestone, light olive-gray, abundantly fossiliferous; greenish-gray micaceous pyritic calcareous clay	10	350
Clay, light-gray to greenish-gray, slightly calcareous, sandy, micaceous; light olive-gray abundantly fossiliferous limestone	15	365
Sandstone, light-gray, calcareous, fossiliferous; greenish-gray sparsely micaceous fissile clay	5	370
Clay, greenish-gray, slightly calcareous, micaceous, fossiliferous	10	380
Clay, greenish-gray, slightly calcareous, silty, micaceous; light-gray calcareous fossiliferous sandstone	5	385
Clay, greenish-gray, slightly calcareous, silty, micaceous, fossiliferous	5	390
Clay, greenish-gray, silty, micaceous; white slightly sandy limestone; light-gray calcareous pyritic fossiliferous sandstone	5	395
Clay, greenish-gray, calcareous, silty, micaceous, fossiliferous	10	405
Clay, greenish-gray, micaceous, fossiliferous; medium light-gray calcareous fossiliferous sandstone	5	410
Clay, greenish-gray, slightly sandy, pyritic, micaceous, fossiliferous	5	415
Sandstone, light-gray, calcareous, pyritic, fossiliferous; light-gray medium to very coarse grained angular to subangular sand	5	420
Clay, greenish-gray, sandy, pyritic, micaceous, abundantly fossiliferous	5	425
No record	5	430
Clay, greenish-gray, slightly sandy, micaceous, fossiliferous	15	445
Sand, light-gray, coarse to very coarse grained with granules and pebbles, subangular; light-gray calcareous pyritic fossiliferous sandstone	25	470
Sand, pinkish-gray, very coarse grained with granules, subangular; greenish-gray micaceous pyritic fossiliferous clay; ferruginous sandy clay	5	475

Table 4.—*Sample logs of wells*—Continued

	Thickness (feet)	Depth (feet)
Well O-6		
Owner: City of Hurtsboro		
Driller: Layne-Central Co.		
Blufftown Formation		
Sand, white, medium-grained, subangular, silty	21	21
Sand, white, medium- to coarse-grained, angular to subangular, slightly glauconitic	24	45
Sand, light-gray to white, fine- to medium-grained, angular to subangular, silty, micaceous, slightly glauconitic and fossiliferous	24	69
Sand, light-gray to white, medium- to coarse-grained, angular to subangular, slightly glauconitic and micaceous; gray sandy micaceous clay	23	92
Clay, gray, sandy, micaceous, glauconitic, abundantly microfossiliferous	24	116
Clay, gray, sandy, micaceous, fossiliferous; light greenish-gray fine- to medium-grained angular to subangular slightly micaceous abundantly glauconitic sand	24	140
Sand, light-gray to white, fine- to medium-grained, angular to subangular, slightly micaceous; gray sandy micaceous clay	23	163
Clay, gray, sandy, slightly glauconitic and micaceous; light greenish-gray fine- to medium-grained angular to subangular slightly glauconitic silty sand	23	186
Eutaw Formation		
Clay, gray, sandy, micaceous, slightly glauconitic, fossiliferous	24	210
Clay, gray, sandy, micaceous, fossiliferous; light-gray medium- to coarse-grained angular to subangular pyritic fossiliferous sand	22	232
Sand, light-gray to white, medium to very coarse grained, angular to subangular, slightly glauconitic, fossiliferous; gray sandy pyritic fossiliferous clay	23	255
Sandstone, gray, calcareous; gray silty micaceous pyritic clay; abundantly fossiliferous	23	278
Clay, gray, sandy, pyritic, abundantly fossiliferous	48	326
Clay, gray, very sandy, fossiliferous	23	349
Clay, gray, sandy, slightly micaceous and fossiliferous	23	372
Clay, gray, sandy, calcareous, slightly micaceous, fissile, fossiliferous	24	396

Table 4.—*Sample logs of wells*—Continued

	Thickness (feet)	Depth (feet)
Well O-6—Continued		
Eutaw Formation—Continued		
Clay, gray, sandy, calcareous, micaceous, fossiliferous; light-gray fine- to medium-grained angular to subangular pyritic sand	24	420
Sandstone, light-gray to white, calcareous; gray silty micaceous clay; light-gray medium to very coarse grained angular to subangular slightly pyritic and fossiliferous sand	23	443
Sand, light yellowish-gray to white, medium to very coarse grained, angular to subangular; gray sandy pyritic micaceous clay	47	490
Sand, white, medium- to coarse-grained, angular to subangular, micaceous; gray silty micaceous clay; brown sandy clay	24	514
Tuscaloosa Group		
Sand, light yellowish-gray, medium to very coarse grained, subangular, micaceous; grayish-red and reddish-brown sandy clay	23	537
Sand, pale yellowish-orange, coarse to very coarse grained, subangular, slightly ferruginous; gray, brown, pale red-purple, and reddish-brown sandy slightly micaceous clay	23	560
Sand, pale yellowish-orange, coarse to very coarse grained, subangular, slightly frosted and ferruginous; varicolored micaceous clay	24	584
Sand, pale yellowish-orange, medium to very coarse grained, subangular, slightly ferruginous; varicolored silty micaceous clay	24	608
Sand, pale yellowish-orange, coarse to very coarse grained, subangular, slightly ferruginous; varicolored sandy micaceous clay	47	655
No record	24	679
Sand, pale yellowish-orange, medium to very coarse grained, subangular, slightly ferruginous; varicolored silty micaceous clay	47	726
Clay, varicolored, silty, micaceous; pale yellowish-orange medium to very coarse grained subangular ferruginous sand	24	750
Sand, pale yellowish-orange, coarse to very coarse grained, ferruginous; varicolored silty clay	46	796
Clay, gray, brown, and red, silty; pale yellowish-orange medium to very coarse grained subangular slightly ferruginous sand	23	819

Table 4.—*Sample logs of wells*—Continued

	Thickness (feet)	Depth (feet)
Well O-6—Continued		
Tuscaloosa Group—Continued		
Sand, pale yellowish-orange, coarse to very coarse grained, subangular, slightly frosted, ferruginous; gray, white and varicolored clay	23	842
Sand, pale yellowish-orange, coarse to very coarse grained, subangular, frosted, ferruginous; gray micaceous clay; varicolored silty clay	47	889
Sand, pale yellowish-orange, silty, clayey, medium to very coarse grained, subangular, ferruginous	46	935
Sand, pale yellowish-orange, coarse to very coarse grained, subangular, slightly ferruginous	24	959
Clay, varicolored, sandy, micaceous; pale yellowish-orange medium to very coarse grained subangular silty sand	24	983
Sand, yellowish-orange to reddish-pink, coarse to very coarse grained, subangular, slightly frosted, ferruginous; gray and varicolored micaceous clay	24	1,007
Sand, pale yellowish-orange, coarse to very coarse grained, subangular, slightly ferruginous; gray and varicolored micaceous clay	24	1,031
Sand, pale yellowish-orange, coarse to very coarse grained, subangular, slightly frosted and ferruginous; gray micaceous fissile clay; varicolored clay; white sandstone. Contains fossil fragments	23	1,054
Sand, pale yellowish-orange, medium to very coarse grained, subangular, frosted, slightly ferruginous; red and gray silty micaceous clay	48	1,102
No record	3	1,105
Well T-1		
Owner: Saint Josephs Missionary Cenacle Driller: Layne-Central Co.		
No record	64	64
Blufftown Formation		
Clay, medium-gray, calcareous, sandy, micaceous, fossiliferous	21	85
Clay, medium light-gray, calcareous, abundantly sandy, micaceous, glauconitic, fossiliferous; light-gray fine-grained angular to subangular silty micaceous glauconitic sand	23	108

Table 4.—*Sample logs of wells*—Continued

	Thickness (feet)	Depth (feet)
Well T-1—Continued		
Blufftown Formation—Continued		
Clay, medium dark-gray, calcareous, sandy, micaceous, fossiliferous	21	129
Sand, medium light-gray, fine-grained, angular to subangular, clayey, calcareous, micaceous, glauconitic, sparsely fossiliferous	22	151
Clay, medium-gray, calcareous, sandy, micaceous, glauconitic, fossiliferous	44	195
Sand, very light gray, coarse to very coarse grained, angular to subangular, slightly clayey, fossiliferous	22	217
Clay, medium dark-gray, calcareous, sandy, micaceous, fossiliferous	23	240
Clay, medium-gray, calcareous, sandy, micaceous, glauconitic, fossiliferous	22	262
Clay, medium-gray, calcareous, sandy, micaceous, glauconitic, fossiliferous; light-gray calcareous fossiliferous sandstone	21	283
Sand, very light gray, coarse to very coarse grained with some granules, subangular, slightly clayey, lignitic	71	354
Eutaw Formation		
Clay, medium light-gray, noncalcareous, sandy, micaceous	21	375
Clay, medium light-gray, calcareous, sandy, micaceous, fossiliferous; light-gray calcareous micaceous sandstone	45	420
Clay, light-gray, fissile, noncalcareous, sparsely fossiliferous	46	466
Clay, light-gray, fissile, slightly calcareous, micaceous, fossiliferous	22	488
Clay, light olive-gray, noncalcareous, slightly micaceous	23	511
Clay, light olive-gray, noncalcareous, slightly micaceous; light olive-gray sandy limestone	22	533
Clay, light olive-gray, noncalcareous, sandy, fossiliferous; light olive-gray sandy limestone	22	555
Clay, medium light-gray, noncalcareous, micaceous, fossiliferous; light-gray calcareous fossiliferous sandstone	23	578
Limestone, light olive-gray, sandy; medium light-gray noncalcareous sandy clay; light-gray calcareous sandstone	23	601

Table 4.—*Sample logs of wells*—Continued

	Thickness (feet)	Depth (feet)
Well T-1—Continued		
Eutaw Formation—Continued		
Clay, medium light-gray, fissile, noncalcareous; very pale orange coarse to very coarse grained subangular sand; pale reddish-brown sandy micaceous clay	22	623
Tuscaloosa Group		
Sand, pale yellowish-orange, coarse to very coarse grained, subangular; some varicolored clay	22	645
Sand, pale yellowish-orange, very coarse grained, angular to subangular, ferruginous; some medium light-gray and varicolored clay	22	667
Sand, pale yellowish-orange, medium to very coarse grained, subangular, ferruginous; moderate reddish-brown and medium light-gray micaceous sandy clay	23	690
Sand, pale yellowish-orange, coarse to very coarse grained, subangular, ferruginous; varicolored and medium light-gray micaceous sandy clay	21	711
Well W-3		
Owner: Richard Comer Driller: H. W. Peerson Drilling Supply Co.		
Ripley Formation—Cusseta Sand Member		
Clay, light-brown, abundantly sandy, ferruginous	10	10
Sand, light-brown, medium to very coarse grained, angular to subangular, silty, ferruginous	10	20
Sand, pale yellowish-orange, medium to very coarse grained, angular to subangular, ferruginous	10	30
Sand, pale yellowish-orange, fine- to medium-grained, angular to subangular, slightly ferruginous	10	40
Sand, very pale orange, fine to very coarse grained, subangular	10	50
Sand, pale yellowish-orange, medium- to coarse-grained, angular to subangular, micaceous	10	60
Sand, dark yellowish-orange, medium- to coarse-grained, angular to subangular, silty, micaceous, ferruginous	10	70
Sand, pale yellowish-orange, fine- to coarse-grained, angular to subangular, micaceous	10	80

Table 4.—*Sample logs of wells*—Continued

	Thickness (feet)	Depth (feet)
Well W-3—Continued		
Blufftown(?) Formation		
Sand, yellowish-gray, fine- to medium-grained, angular to subangular, silty, micaceous; medium-gray sandy clay	10	90
Sand, brownish-gray, fine- to medium-grained, angular to subangular, clayey, silty, micaceous, sparsely fossiliferous; medium dark-gray silty clay	10	100
Sand, yellowish-gray, fine- to medium-grained, angular to subangular, silty, micaceous; medium dark-gray fossiliferous clay	20	120
Sand, moderate yellowish-brown, medium to very coarse grained, subangular, silty, ferruginous; medium dark-gray pyritic lignitic fossiliferous clay	20	140
Sand, moderate yellowish-brown, coarse to very coarse grained, angular to subangular, silty, ferruginous, fossiliferous	10	150
Clay, dark yellowish-brown, very sandy, ferruginous, fossiliferous	10	160
Clay, olive-gray, abundantly sandy, calcareous, micaceous, fossiliferous	10	170
Clay, medium dark-gray, sandy, calcareous, micaceous, fossiliferous	10	180
Clay, olive-gray, sandy, calcareous, fossiliferous; with ferruginous coarse sand and granules	20	200
Clay, olive-gray, sandy, calcareous, sparsely micaceous, fossiliferous	10	210
Clay, olive-gray, sandy, calcareous, micaceous, fossiliferous	30	240
Clay, olive-gray, abundantly sandy, calcareous, micaceous, fossiliferous	50	290
Clay, dark greenish-gray, sandy, calcareous, micaceous, sparsely fossiliferous	10	300
Clay, olive-gray, abundantly sandy, calcareous, micaceous, fossiliferous	80	380
Sand, olive-gray, fine- to medium-grained, angular to subangular, clayey, micaceous, fossiliferous	10	390
Clay, olive-gray, sandy, calcareous, micaceous, fossiliferous	10	400
Clay, olive-gray, abundantly sandy, calcareous, micaceous, fossiliferous	30	430
Sand, light olive-gray, medium-grained, angular to subangular, sparsely glauconitic and fossiliferous	10	440

Table 4.—*Sample logs of wells*—Continued

	Thickness (feet)	Depth (feet)
Well W-3—Continued		
Blufftown(?) Formation—Continued		
Clay, olive-gray, sandy, calcareous, sparsely micaceous and fossiliferous	10	450
Sand, light olive-gray, medium- to coarse-grained, angular to subangular, slightly clayey	10	460
Sand, light olive-gray, fine- to medium-grained, angular to subangular, silty; light olive-gray micaceous sandy clay	30	490
Sand, light olive-gray, fine- to medium-grained, angular to subangular, silty, sparsely micaceous and fossiliferous	10	500
Clay, light olive-gray, abundantly sandy, calcareous, micaceous, fossiliferous	20	520
Sand, light olive-gray, fine- to coarse-grained, angular to subangular, clayey, micaceous, sparsely glauconitic, ferruginous, fossiliferous	10	530
Clay, olive-gray, calcareous, slightly sandy, micaceous, fossiliferous	10	540
Clay, olive-gray, sandy, calcareous, micaceous, fossiliferous	20	560
Sand, greenish-gray, fine-grained, angular to subangular, silty, micaceous, fossiliferous	10	570
Clay, olive-gray, sandy, calcareous, micaceous, pyritic, fossiliferous	50	620
Sand, olive-gray, fine-grained, angular to subangular, silty, sparsely micaceous, fossiliferous	10	630
Clay, olive-gray, sandy, calcareous, micaceous, fossiliferous	10	640
Sand, olive-gray, fine-grained, angular to subangular, very silty, micaceous, fossiliferous	40	680
Eutaw(?) Formation		
Clay, olive-gray, sandy, calcareous, micaceous, sparsely lignitic, fossiliferous	10	690
Clay, olive-gray, sandy, calcareous, micaceous, macrofossiliferous	10	700
Clay, light olive-gray, abundantly sandy, micaceous, fossiliferous	20	720
Sand, light olive-gray, fine- to coarse-grained, angular to subangular, silty, sparsely micaceous, abundantly fossiliferous	10	730
Sand, light olive-gray, fine- to medium-grained, angular to subangular, silty, micaceous, sparsely fossiliferous	20	750

Table 4.—*Sample logs of wells*—Continued

	Thickness (feet)	Depth (feet)
Well W-3—Continued		
Eutaw(?) Formation—Continued		
Clay, olive-gray, sandy, calcareous, micaceous, pyritic, fossiliferous	30	780
Clay, olive-gray, sandy, noncalcareous, sparsely micaceous, abundantly fossiliferous; with ferruginous sand and granules	10	790
Clay, olive-gray to dark greenish-gray, sandy, micaceous, fossiliferous	30	820
Clay, dark greenish-gray, sandy, slightly calcareous, sparsely micaceous, fossiliferous	10	830
Sand, olive-gray, fine- to medium-grained, angular to subangular, clayey, sparsely micaceous, fossiliferous; light olive-gray micaceous clay	10	840
Clay, olive-gray, abundantly sandy, calcareous, sparsely micaceous, fossiliferous	10	850
Sand, olive-gray to brownish-gray, medium to very coarse grained, subangular, clayey, sparsely micaceous, lignitic, ferruginous	10	860
Clay, olive-gray, sandy, calcareous, sparsely micaceous, fossiliferous	10	870
Clay, greenish-gray, fissile, noncalcareous; yellowish-gray medium to very coarse grained subangular silty sand	20	890
Sand, yellowish-gray, coarse to very coarse grained, angular to subangular; greenish-gray sparsely micaceous fissile clay	10	900
Clay, medium dark-gray, sandy, calcareous, micaceous	20	920
Clay, olive-gray, sandy, calcareous, sparsely micaceous, fossiliferous	10	930
Sand, very light gray, coarse to very coarse grained, subangular; medium-gray slightly calcareous micaceous sandy clay	8	938

Table 5.—*Drillers' logs of wells*

	Thickness (feet)	Depth (feet)
Well A-11		
Owner: Radio Station WGBA Driller: H. W. Peerson Drilling Supply Co.		
Clay, red, sandy	18	18
Sand and gravel	7	25
Clay, yellow	10	35
Marl, blue	37	72
Clay, yellow; streaks of muddy sand	29	101
Sandstone	12	113
Sand	18	131
Clay, red; streaks of sand	36	167
Sand, rock, and clay, interbedded	63	230
Rock and clay	35	265
Sand, packed	10	275
Soapstone	18	293
Gumbo, red	68	361
Clay, sandy	6	367
Clay	29	396
Sand, hard-packed	13	409
Clay	5	414
Granite	---	----
Well A-22		
Owner: Cartersville Gas Co. Driller: Layne-Central Co.		
Clay, sandy	12	12
Clay; streaks of sand	78	90
Clay, sandy	110	200
Sand	16	216
Clay	4	220
Sand	4	224
Clay, sandy	13	237
Shale and rock	12	249
Well H-3		
Owner: C. G. Lee Driller: Acme Drilling Co.		
Clay	20	20
Rock and shells	1	21
Clay, blue	10	31

Table 5.—*Drillers' logs of wells*—Continued

	Thickness (feet)	Depth (feet)
Well H-3—Continued		
Shellrock	---	----
Clay, blue	6	37
Shale; streaks of sand	19	56
Sand	5	61
Clay, sandy	5	66
Sand; streaks of clay	7	73
Sand, packed, no good	9	82
Clay and shale	55	137
Sand, draggy	8	145
Sand, no good	10	155
Clay	3	158
Sand, no good	8	166
Clay	3	169
Sand, no good	16	185
Clay	5	190
Sand, draggy	37	227
Sand, fair	8	235
Sand	3	238
Clay	10	248
Rock	---	----
Sand, cut good	3	251
Clay	10	261
Sand, draggy	11	272
Clay	34	306
Sand, fair	8	314
Sand, packed, good	12	326
Well M-1		
Owner: Albert Dudley		
Driller: S. E. Miller (?)		
Clay	25	25
Sand, fine	8	33
Marl, blue	12	45
Sand	2	47
Marl	13	60
Sand, coarse (gas)	2	62
Lignite	---	----
Marl, sandy	18	80
Marl, blue	50	130
Marl, blue, hard, with shells	50	180
Carbonaceous material	---	----

Table 5.—*Drillers' logs of wells*—Continued

	Thickness (feet)	Depth (feet)
Well M-1—Continued		
Shells and clay	20	200
Clay, blue; some shells	5	205
Marl, medium-hard	107	312
Marl, with shells	18	330
Marl	45	375
Clay and gravel	55	430
Sand and gravel	10	440
Well N-2		
Owner: A. B. Carrol, Sr.		
Driller: Acme Drilling Co.		
Clay, yellow	9	9
Limestone, soft	7	16
Clay, yellow	2	18
Limestone, soft	2	20
Marl, blue, tough; hard limestone and shellrock	156	176
Shale, green, hard, brittle; limestone and shellrock	134	310
Rock, hard	----	----
Clay and shale with rock ledges	57	367
Sand, white	2	369
Gumbo, reddish-brown, tough	14	383
Sand, packed, low permeability	31	414
Clay	1	415
Well O-3		
Owner: City of Hurtsboro		
Driller: Layne-Central Co.		
Clay, sandy	10	10
Sand, soft	42	52
Shale, hard	72	124
Rock	2	126
Marl, blue	25	151
Rock	1	152
Clay	7	159
Rock	2	161
Clay	5	166
Rock	1	167
Marl, blue	7	174
Rock	2	176

Table 5.—*Drillers' logs of wells*—Continued

	Thickness (feet)	Depth (feet)
Well O-3—Continued		
Clay	22	198
Shale	12	210
Rock	2	212
Clay	29	241
Rock	17	258
Shale	10	268
Rock	4	272
Shale	28	300
Clay	27	327
Shale and shells	42	369
Shale	33	402
Clay	18	420
Shale and boulders	22	442
Sand, packed, cut good	19	461
Shale	16	477
Shale, sandy	9	486
Sand, packed	7	493
Shale, hard	27	520
Well O-6		
Owner: City of Hurtsboro		
Driller: Layne-Central Co.		
Known as City of Hurtsboro, deep test hole No. 1		
Clay, sandy	2	2
Sand	17	19
Clay, sandy	16	35
Sand	19	54
Shale, sandy	33	87
Shale	37	124
Rock	1	125
Shale	7	132
Sand, fine	6	138
Shale	7	145
Chalk	6	151
Shale and chalk	23	174
Shale	63	237
Rock	1	238
Clay	2	240
Rock	1	241
Clay	6	247

Table 5.—*Drillers' logs of wells*—Continued

	Thickness (feet)	Depth (feet)
Well O-6—Continued		
Rock	1	248
Clay	3	251
Rock	2	253
Clay, sandy, fossiliferous	13	266
Rock	2	268
Clay	154	422
Rock	1	423
Clay	1	424
Rock	1	425
Clay	1	426
Rock	1	427
Clay	1	428
Rock	2	430
Clay	9	439
Rock	2	441
Clay	5	446
Clay; streaks of sand	8	454
Sand, hard-packed	6	460
Clay	28	488
Sand, hard-packed	10	498
Rock	1	499
Clay and rock	26	525
Sand, draggy	23	548
Clay and gravel	16	564
Sand, hard-packed; clay	13	577
Clay	9	586
Sand	3	589
Clay; streaks of sand	15	604
Sand	4	608
Clay; streaks of sand	15	623
Sand, hard-packed with draggy streaks	10	633
Clay, sandy; streaks of sand	12	645
Clay	13	658
Sand, hard-packed; streaks of clay	9	667
Clay, sandy	4	671
Clay, hard	24	695
Clay, sandy	21	716
Clay, hard	24	740
Clay, sandy; streaks of sand	20	760
Clay, varicolored	36	796
Rock	1	797
Clay, streaks of sand	13	810
Clay, sandy	5	815

Table 5.—*Drillers' logs of wells*—Continued

	Thickness (feet)	Depth (feet)
Well O-6—Continued		
Sand	4	819
Sand, hard-packed	6	825
Clay; streaks of sand	8	833
Sand, hard-packed; streaks of clay	9	842
Clay	14	856
Rock	1	857
Clay	28	885
Sand, hard-packed	4	889
Sand, hard-packed; draggy streaks	17	906
Clay, hard, sandy	21	927
Clay, soft, sandy	4	931
Sand, hard-packed	9	940
Clay, hard	12	952
Rock	2	954
Clay, hard	6	960
Rock	1	961
Clay, hard	4	965
Rock	1	966
Clay, hard; rock	4	970
Sand, draggy	10	980
Clay, hard	3	983
Sand; streaks of clay	24	1,007
Sand	3	1,010
Clay; streaks of sand	9	1,019
Sand, hard-packed, draggy	7	1,026
Clay; streaks of sand	7	1,033
Rock	1	1,034
Clay; streaks of sand	11	1,045
Rock	1	1,046
Sand, hard, draggy	10	1,056
Clay	4	1,060
Sand, hard-packed	7	1,067
Sand, hard, draggy	11	1,078
Clay, hard, sandy	27	1,105
Well T-1		
Owner: Saint Josephs Missionary Cenacle Driller: Layne-Central Co.		
Surface sand	3	3
Clay	18	21
Clay, sandy; shells	11	32
Rock	2	34

Table 5.—*Drillers' logs of wells*—Continued

	Thickness (feet)	Depth (feet)
Well T-1—Continued		
Clay, sandy; shells	19	53
Shale and shells	27	80
Rock	2	82
Shale and shells	63	145
Rock	3	148
Shale and shells	53	201
Sand	10	211
Rock	1	212
Shale; streaks of sand	19	231
Shale	21	252
Rock	3	255
Shale, sandy; shells	31	286
Rock, hard	3	289
Shale	11	300
Sand, water-bearing	57	357
Shale; streaks of sand	23	380
Rock	1	381
Shale, sandy; boulders	11	392
Rock, hard	3	395
Shale	5	400
Rock, hard	2	402
Shale	113	515
No record	196	711
Fort Benning Military Reservation well 9		
Owner: U.S. Army		
Driller: Layne-Atlantic Co.		
Surface sand and clay	17	17
Sand	20	37
Sand, coarse; gravel	17	54
Gravel and blue clay	2	56
Gravel and blue shale	10	66
Shale; streaks of sand	11	77
Clay, blue; sandy streaks	22	99
Clay, blue	13	112
Shale, sandy	9	121
Sand; white clay	19	140
Clay, sandy	20	160
Sand and shale	5	165
Clay, red	5	170
Clay, red; gravel	30	200

Table 5.—*Drillers' logs of wells*—Continued

	Thickness (feet)	Depth (feet)
Fort Benning Military Reservation well 9—Continued		
Sand, medium	82	282
Sand, hard	18	300
Sand, hard; clay	20	320
Sand, soft; clay	5	325
Sand, hard; clay	17	342
Sand, hard	3	345
Sand and clay	33	378
Sand and gravel	4	382
Clay, white, chalky	10	392
Clay, white, sandy, chalky	36	428
Clay, sand, and gravel	20	448
Clay	10	458
Clay, sandy	20	478
Clay, red	16	494
Clay, sandy	30	524
Sand and gravel	31	555
Granite	13	568

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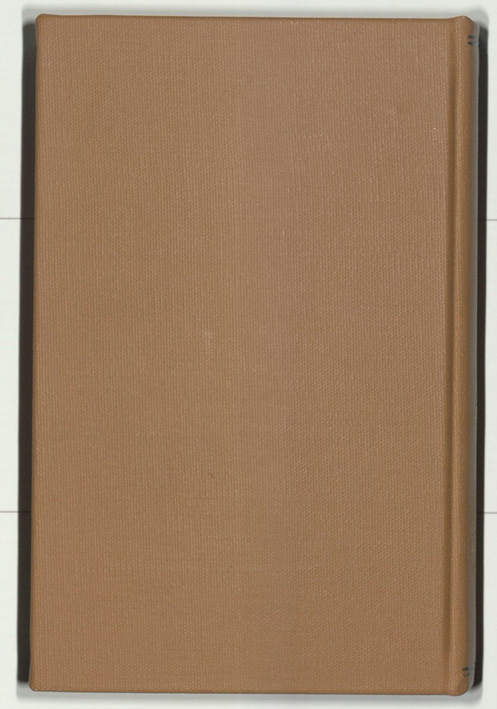
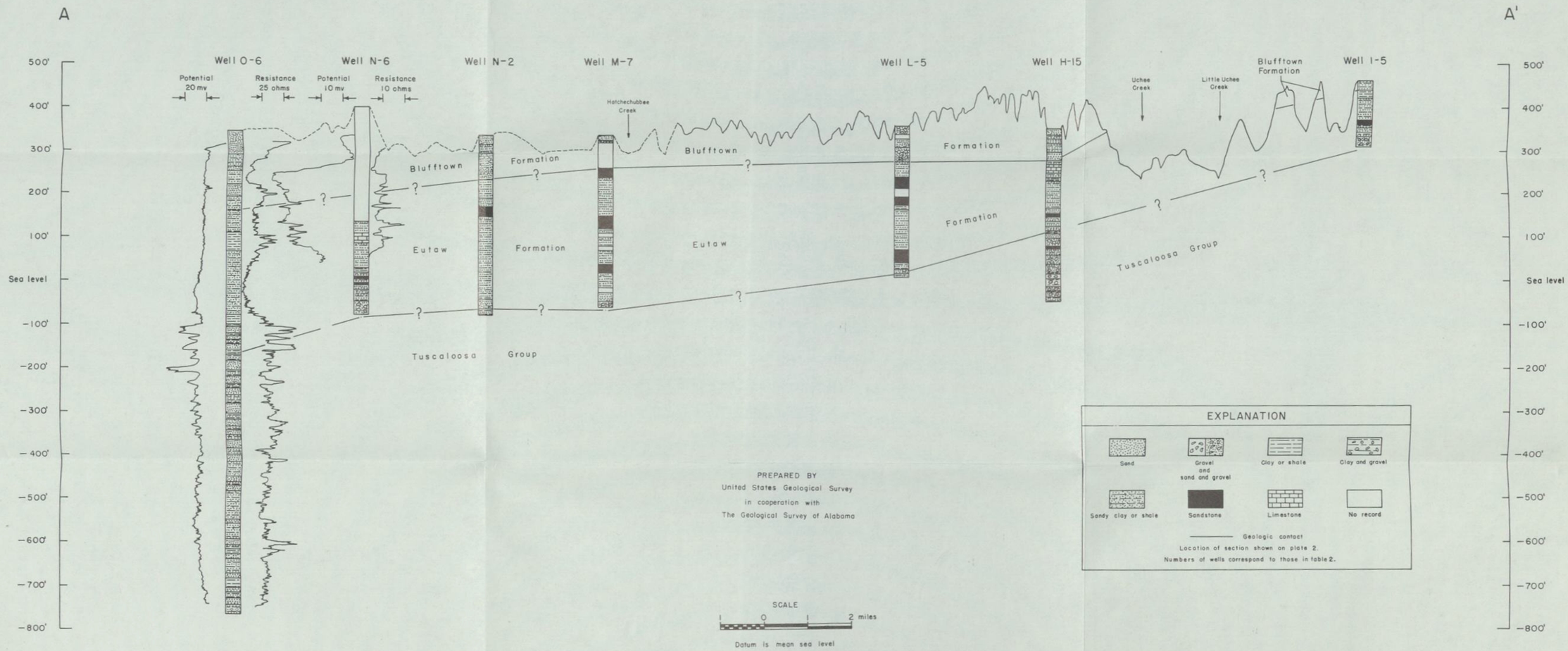
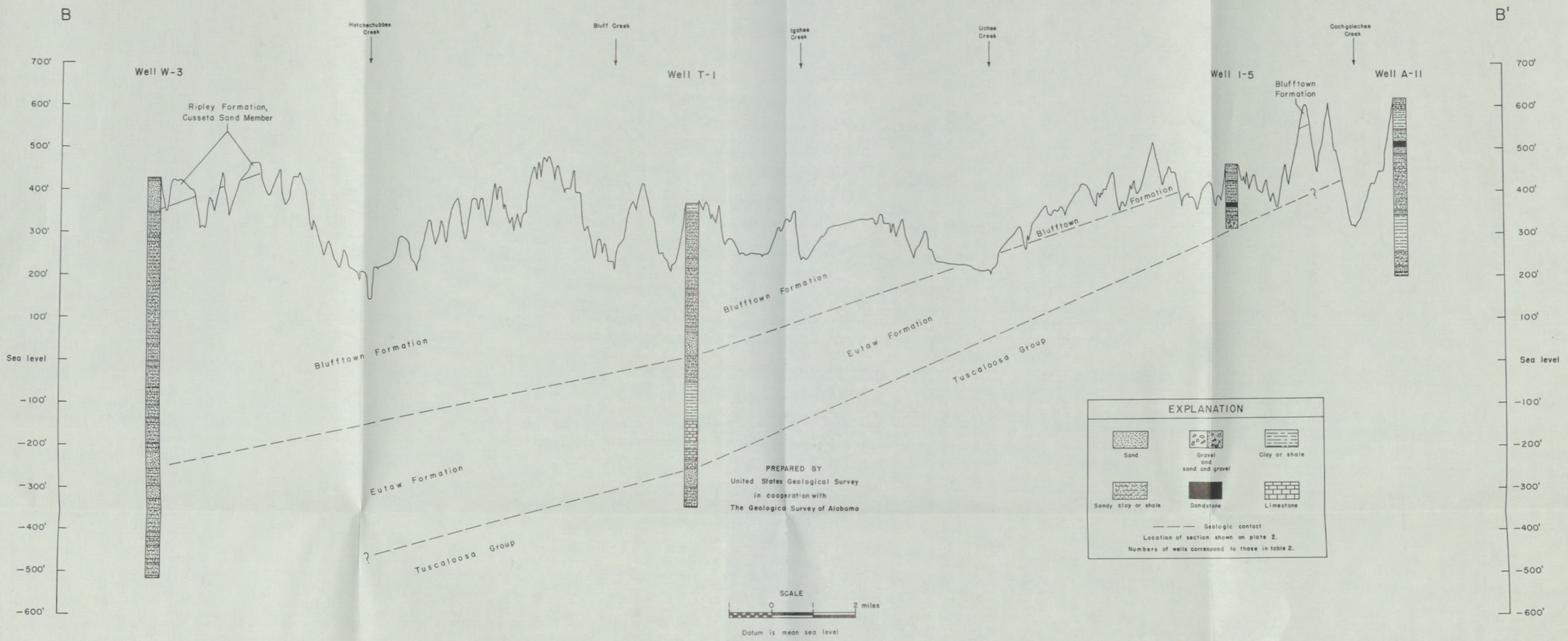


LOCATION OF WELLS IN RUSSELL COUNTY AND AREAS OF ARTESIAN FLOW



STRATIGRAPHIC SECTION FROM HURTSBORO TO 4.8 MILES SOUTHWEST OF PHENIX CITY, RUSSELL COUNTY, ALA.



STRATIGRAPHIC SECTION FROM 1.9 MILES SOUTH OF GLENVILLE TO LADONIA, RUSSELL COUNTY, ALA.